



**Carrying the Torch for the  
Next Healthy Generation**  
National Coordinators' Meeting  
Arlington, Virginia • February 24-27, 2014

# On Pace to Win the Race: Youth Evaluation Best Practices

**Audrey Adler**

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**Moderator:** Jean Ann Fischer,  
University of  
Nebraska – Lincoln

# Objectives of the Session

## ■ Part One

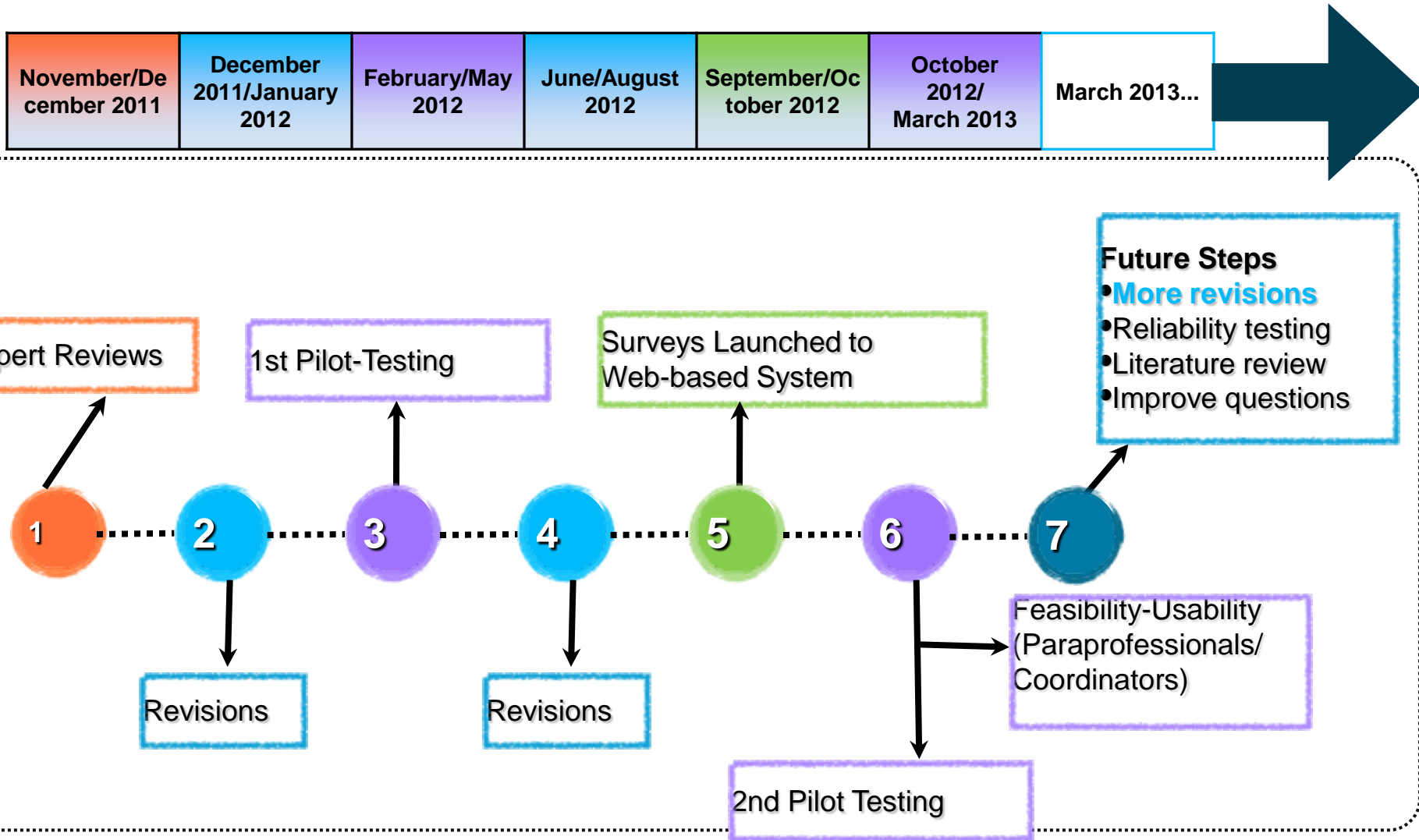
- Update on current and planned activities of the EFNEP Youth Evaluation Committee
- A synopsis of nutrition behavior change research and how it relates to current EFNEP youth evaluation efforts.
- Feedback from you: What are your EFNEP priorities? What behaviors do you believe we can influence?

## ■ Part Two

- Facilitated round-table discussions on best practices related to training and implementation of the EFNEP youth evaluation tools.

# February 2014

## EFNEP Youth Evaluation Committee Updates



**Revise, Evaluate, Revise, Evaluate, Revise...**

**Future Steps**

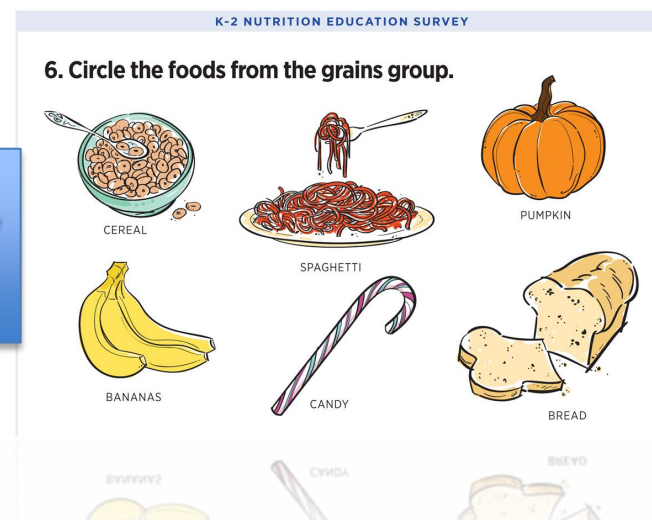
- **More revisions**
- Reliability testing
- Literature review
- Improve questions

# EFNEP Youth Evaluation Committee Updates

Tasks to Improve Questionnaires	Method	Date completed	Outcome
To complete analyses of cognitive interviews	Coding scheme (Presser & Blair, 1994; Van der Zouwen & Smit, 2004).	K-12 <sup>th</sup> May 2013	Cognitive Interview Research Project Report
To perform analysis of Pre and Post-Education - Item Analyses (WebNEERS)	22 states; T-Test and paired T-Tests analyses	June 2013	Cornell University Report
Analyses per question – includes all of previous testing (See examples in next slide)	Retrospective evaluation of all the reports and communications.	K-2 <sup>nd</sup> Dec 2013 3-5 <sup>th</sup> Dec 2013 6-8 <sup>th</sup> In progress 9-12 In progress	Master table of the Development and Revision of the 2013 Youth EFNEP Evaluation Checklists
Continue Literature Review	Varies	Continuous process	Presentation today

# EFNEP Youth Evaluation Committee Updates

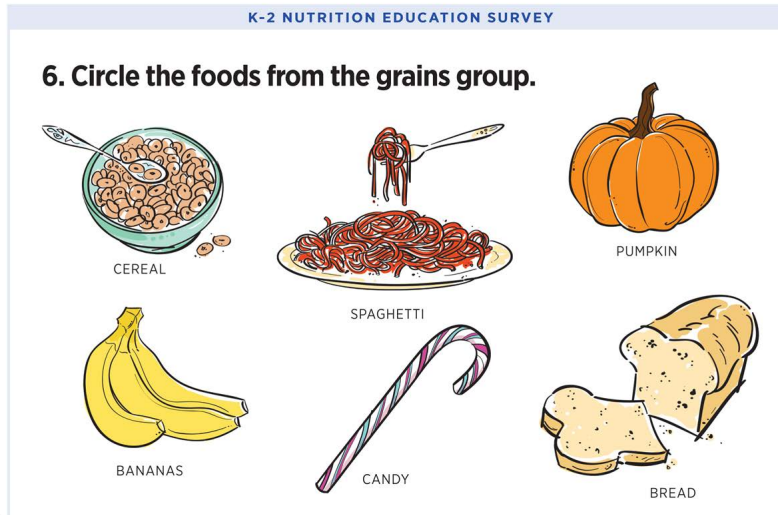
## K-2 Survey



**Table 1. Results from the Testing and Revisions done to the K-2th Grade Youth EFNEP Checklist before the Launched of Web-NEERS System on Sseptember 2012**

Version 2.0/Reference (Aug-Sept 2011)	Problems Identify by Experts (Nov-Dec 2011)	Revised Q&A (Version 3.0)	Cognitive Testing 1 (Feb-August 2012)	Web-NEERS Current Checklists Questions		
				Revised Q& A (Version 4.0)	Core Area/ Content	Type Of Measure
<p><b>Question:</b> (Circle the foods from the Grains Group.</p> <p><b>Answers (Pictures):</b> Bananas, oat bran, syrup, taco shell, tomato, bread</p> <p><b>Reference</b> Professor Popcorn (Purdue)</p>	<p><b>Problem:</b></p> <ul style="list-style-type: none"> <li>- Inadequacy of pictures: Syrup may not be recognizable; tortilla is a little bit abstract...some kids will know that is a taco.</li> <li>-Not sure kids will recognize oat bran.</li> <li>-Focus more on whole grains;</li> <li>-Get rid of words on pictures and ensure pictures are recognizable.</li> <li>-Lack of relevancy of the construct: Knowledge only, and does not assess diet quality.</li> </ul>	<p><b>Question: Q6</b> Circle the foods from the Grains Group.</p> <p><b>Answers (Pictures):</b> A bowl of cereal, a candy cane, spaghetti, a tomato, a slice of bread, bananas</p>	<p><b>Problem:</b></p> <ul style="list-style-type: none"> <li>- The picture of meat around spaghetti should be removed because sometimes children consider it as meat rather than grains.</li> <li>-The newer version has meatballs around it.</li> <li>-The tomato is not clear in the newer version. - Cereal bowl is clear in the newer version.</li> <li>-Remove meat from the spaghetti. Add a pumpkin instead of the tomato.</li> </ul>	<p><b>Question:</b> <b>Circle the foods from the Grains Group.</b></p> <p><b>Answers (Pictures):</b> <b>A bowl of cereal, a candy cane, spaghetti, a <u>pumpkin</u>, a slice of bread, bananas</b></p>	<p>Diet Quality/ Grains</p>	<p>Knowledg e-examples of grains</p>

# EFNEP Youth Evaluation Committee Updates



## K-2 Survey

**Table 2. Further Testing Results of the 2013 Youth EFNEP Evaluation Questions for Future Revision**

Web-NEERS Current Checklist Questions	Cognitive Testing 2 (Oct2012-March 2013)	Sensitivity to change based on Web-NEERS data*	EFNEP Feedback On-Line Survey Results	Conclusions/Next Steps for this Question
<b># 6 Circle the foods from the Grains group.</b>	<p><b>Problem</b></p> <p>- Five of nine understand “grains” although spaghetti was missed by four. As grains are not deficient in children’s diets, we suggest omitting this item or focus only on whole grains which are deficient in children’s diets according to national dietary surveys.</p>	<p>54% increased, 14% decreased, 32% stayed the same.</p> <p>Pre-test:</p> <ul style="list-style-type: none"> <li>• 7% answered 1 correct</li> <li>• 16% answered 2 correct</li> <li>• 19% answered 3 correct</li> <li>• 20% answered 4 correct</li> <li>• 26% answered 5 correct</li> <li>• 11% answered 6 correct</li> </ul> <p>11% of the youth gave the desired response before the lessons started. This gave room for improvement after the program.</p>	<p><b>Problem</b></p> <p>No major problems</p>	<p>To evaluate the following alternative: Circle grains with fiber. Omit this item or use the one with fiber.</p>

# EFNEP Youth Evaluation Committee Updates

## 3rd-5th Grade Survey

### I Eat Vegetables

Version 2.0/Reference (Aug-Sept 2011)	Problems Identify by Experts (Nov-Dec 2011)	Revised Q&A (Version 3.0)	Cognitive Testing 1 (Feb-August 2012)	Web-NEERS Current Checklists Questions		
				Revised Q&A (Version 4.0)	Core Area/ Content	Type Of Measure
<b>Question:</b> I eat <b>vegetables every day</b> <b>Answers:</b> Hardly ever, Sometimes, Almost always <b>Reference:</b> MSU JIFF, no psychometrics available	<b>Problem:</b> -Many concerned with responses: -Can't "sometimes eat veg everyday." -Move every day to response; try 4 instead of 3 to pick up change; add never; add time frame?	<b>Question:</b> I eat veg's... <b>Answers:</b> Never or almost never, Some days, Most days, Every day or almost every day	<b>Problem:</b> -Confused by difference between "almost every day" versus "most days" – seems like same thing. -Show pictures as administer (not done). <b>Change:</b> - Changed last response to just "Every day" instead of "Every day or almost every day". Rest same	<b>Question:</b> <b>1. I eat vegetables...</b> <b>Answers:</b> <b>Never or almost never, Some days, Most days Every day</b>	Dietary Quality/ Vegetables	Behavior (How often eat veggies)

**Table 2. Further Testing Results of the 2013 Youth EFNEP Evaluation Questions for Future Revision**

Web-NEERS Current Checklist Questions	Cognitive Testing 2 (Oct2012-March 2013)	Sensitivity to change based on Web-NEERS data*	EFNEP Feedback On-Line Survey Results	Conclusions/Next Steps for this Question
<b>#1</b> <b>Question:</b> I eat vegetables... <b>Answers:</b> Never or almost never, Some days, Most days, Every day	<b>Problem</b> No problems	33% increased, 17% decreased, 50% stayed the same Pre-test: • 9% Never or almost never (1) • 38% Some days (2) • 31% Most days (3) • 23% Every day (4) Mean change +0.21, from 2.67 to 2.88 ( $p \leq 0.005$ )	<b>Problem</b> Several said to simplify survey and shorten answers in general. Specific recommendations: Limit response choices to 3. Just "Never" not "Never or almost never."	-Change 1 <sup>st</sup> response to "Never" instead of "Never or almost never"? Keep 4 options for more chance of picking up change. (Maybe add to upper end "2 or more times a day" or "more than once a day" since 23% already at highest level – but that overlaps with "Every day")



# *EFNEP Youth Evaluation Committee*

## What are the Next Steps?

- 2011- 2014
  - Prioritize contents/behaviors
- 2014 – 2015
  - Continue to focus on content improvement
  - Others will work on improving the process
    - » Training
    - » Data entry; coding; etc.
    - » Reporting



**Future Steps**

- **More revisions**
- Reliability testing
- Literature review
- Improve questions

# *EFNEP Youth Evaluation Committee*

## What are the Next Steps?

### Slow and deliberate change

	Method	Time frame	Outcome
<b>CONTENT</b>			
Analyses per question	Retrospective evaluation	6-8 <sup>th</sup> ; 9-12 <sup>th</sup> 2014	Master table
Continue Literature Review	Varies	Continuous process 2014	Identification of core areas and other potential questions
Explore ways to simplify the K-2 tool	Under discussion	TBD	More useable tool
Focus on 3-5 <sup>th</sup>	Reliability and validity analyses	October 2015	Valid evaluation tool
<b>PROCESS EVALUATION</b>			
<input type="checkbox"/> Administration of the tools <input type="checkbox"/> Training on the tools <input type="checkbox"/> Connection with learning objectives	Round Table Sessions EFNEP Conference	2014	Implement best practices based on current experiences. Improve current practices.

# Youth Evaluation Committee

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Julie Cooper

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Yenory Hernandez

Maria Lambea

Melissa Maulding

Megan Ness\*

Kathy Orchen

Olga Santiago

Marilyn Townsend\*

Wendy Wolfe

\*New members .....**others welcome!**

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Wendy Wolfe

**Red = present at Conference**



# EFNEP

Expanded Food and Nutrition Education Program



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## Youth Evaluation: the literature and EFNEP practices

Marilyn Townsend

Nutrition UC Davis

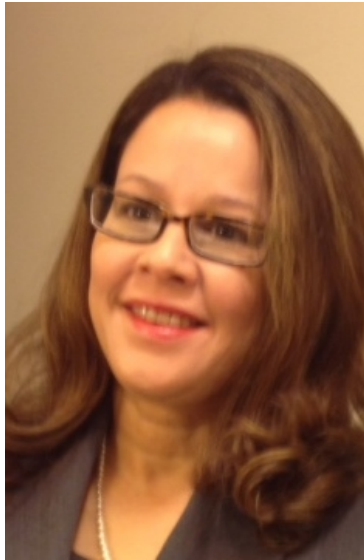
Olga Santiago

Extension MSU

# Contributors



Marilyn Townsend, PhD, RD



Olga Santiago, PhD



Isobel Contento, PhD

# National youth tools FY13-14

- K-2<sup>nd</sup> grade
- 3<sup>rd</sup>-5<sup>th</sup> grade
- 6-8<sup>th</sup> grade
- 9<sup>th</sup>-12<sup>th</sup> grade

3-5 NUTRITION EDUCATION SURVEY

STUDENT'S CODE NUMBER \_\_\_\_\_ DATE \_\_\_\_\_

**DO NOT write your name on this survey.**  
The answers you give will be kept private. This survey is voluntary.

Circle the answer that best applies to you

	1	2	3
1. I eat vegetables...	Never or almost never	Some days	Most days
2. I eat fruit...	Never or almost never	Some days	Most days
3. I choose healthy snacks...	Never or almost never	Some days	Most days
4. I eat breakfast...	Never or almost never	Some days	Most days
5. I do physical activities...	Never or almost never	Some days	Most days

	1	2
6. Being active is fun.	I don't agree	I'm not sure
7. Being active is good for me.	I don't agree	I'm not sure

3-5 • UNPDP YOUTH EVALUATION • SEPTEMBER 2012  
PAGE 1 of 3

BEHAVIOR CHECKLIST FOR 6TH-8TH GRADES

STUDENT'S CODE NUMBER \_\_\_\_\_ DATE \_\_\_\_\_

**DO NOT write your name on this survey.**  
The answers you give will be kept private. This survey is voluntary.

The first 4 questions ask about food you ate or drank. Circle the answer that best describes you.

	0	1	2	3	4
1. Yesterday, how many times did you eat vegetables, not counting French fries? Include cooked vegetables, canned vegetables and salads. If you ate 2 different vegetables in a meal or snack, count them as 2 times.	None	1 time	2 times	3 times	4+ times
2. Yesterday, how many times did you eat fruit, not counting juice? Include fresh, frozen, canned, and dried fruits. If you ate 2 different fruits in a meal or snack, count them as 2 times.	None	1 time	2 times	3 times	4+ times
3. Yesterday, how many times did you drink nonfat or 1% low-fat milk? Include low-fat chocolate or flavored milk, and low-fat milk on cereal.	None	1 time	2 times	3 times	4+ times
4. Yesterday, how many times did you drink sweetened drinks like soda, fruit-flavored drinks, sports drinks, energy drinks and vitamin water? Do not include 100% fruit juice.	None	1 time	2 times	3+ times	

6-8 • UNPDP YOUTH EVALUATION • AUGUST 2012  
PAGE 1 of 3

BEHAVIOR CHECKLIST FOR 9TH-12TH GRADES

STUDENT'S CODE NUMBER \_\_\_\_\_ DATE \_\_\_\_\_

**DO NOT write your name on this survey.**  
The answers you give will be kept private. This survey is voluntary.

Questions ask about food you ate or drank. Circle the answer that best describes you.

	0	1	2	3	4
1. Yesterday, how many times did you eat vegetables, not counting French fries? Include cooked vegetables, canned vegetables and salads. If you ate 2 or more different vegetables in a meal or a snack, count each of them in your total number of times.	None	1 time	2 times	3 times	4+ times
2. Yesterday, how many times did you eat fruit, not counting juice? Include fresh, frozen, canned, and dried fruits. If you ate 2 or more different fruits in a meal or a snack, count each of them in your total number of times.	None	1 time	2 times	3 times	4+ times
3. Yesterday, how many times did you drink nonfat or 1% low-fat milk? Include low-fat chocolate or flavored milk, and low-fat milk on cereal.	None	1 time	2 times	3 times	4+ times
4. Yesterday, how many times did you drink sweetened drinks like soda, fruit-flavored drinks, sports drinks, energy drinks and vitamin water? Do not include 100% fruit juice.	None	1 time	2 times	3+ times	

9-12 • UNPDP YOUTH EVALUATION • SEPTEMBER 2012  
PAGE 1 of 3



# National Youth EFNEP data

- Meetings 6.1
- Contact 8.3 hours
- Dose 8 hours

FY2012 data from National Data Report, [http://www.nifa.usda.gov/nea/food/efnep/pdf/ntl\\_report\\_2012.pdf](http://www.nifa.usda.gov/nea/food/efnep/pdf/ntl_report_2012.pdf)





# Youth Evaluation: the literature and our practices

## Two questions today

- Is nutrition education for youth effective?
- If so, what elements of effectiveness would contribute to Youth EFNEP curricula & evaluation?

# Youth Evaluation: the literature and our practices

## Two questions today

- **Is nutrition education for youth effective?**
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# School-based F&V Interventions

	Study	Components	Classroom Dose	Duration
1.	CATCH	Classroom, family, food service	30 hours	3 years
2.	Integrated Nutrition Project	Classroom, Family	20	
3.	Power Plus (MN)*	Classroom, family, food service	20	2 years
4.	5 A Day (CO)*	Classroom	13	1 year
5.	High 5 (Ala)*	Classroom, family food Service	9	2 years
6.	Power Play (CA)*	Classroom Social marketing	5	8 weeks
7.	Gimme 5 (LA)	Classroom, media, food service, family	30	3 years

# School-based F&V Interventions

896 citations --> 24 studies--> 13 --> 7 gave data

	Change pre to post (per day)
Meta-analysis of 7 studies <ul style="list-style-type: none"><li>◆ 8000 students</li><li>◆ 7 states</li><li>◆ behaviorally-focused</li><li>◆ FV</li><li>◆ NIH funded; lots of \$\$</li></ul>	?

# School-based F&V Interventions

896 citations --> 24 studies--> 13 --> 7 gave data

	Change pre to post (per day)
Meta-analysis of 7 studies <ul style="list-style-type: none"><li>◆ 8156 students</li><li>◆ 7 states</li><li>◆ behaviorally-focused</li><li>◆ FV</li><li>◆ NIH funded; lots of \$\$</li></ul>	0.4 serving = $\frac{1}{4}$ cup F&V combined

Howerton JNEB 2007;39:186-196

# School-based Nutrition Education Systematic Review

Review	Target Group	Types of program	Results for stated behavioral goals
<b>Contento et al. 1995</b>	5-18 yrs 1980-1995 40 studies	General nutrition n =17  Behaviorally- focused n =23	8/17 effective = 47%  18/23 effective = 78%

Contento, Balch, Bronner, Lytle et al. JNEB 1995; 27:298-311  
Contento et al. JNEB 2002;34:2-25.

# Interventions preventing obesity in children in schools

Review	Target group	Effects by components	Effect size SMD units
8 studies	Ages 5-18 yrs 10,752 children	Nutr + PA+ TV	moderate weight loss [-.29 (95%CI: -0.45 to -0.14)]

- 1-5 years duration
- Diet, PA, TV interventions best...behaviorally-focused



# Interventions with Youth EFNEP

Authors	Research Design	Age group/ sample (n)	Audience	Outcomes	Dose
Townsend et al. 2006	<ul style="list-style-type: none"> <li>Randomized control field trial</li> </ul>	<ul style="list-style-type: none"> <li>9-11 years old/</li> <li>229 groups - 5,111 youth</li> </ul>	<ul style="list-style-type: none"> <li>EFNEP Youth California</li> </ul>	<ul style="list-style-type: none"> <li>Improvement in (1) nutrition knowledge (2) food selection and (3) food preparation and safety practices</li> </ul>	<ul style="list-style-type: none"> <li>7 lessons</li> <li>6-8 hours</li> </ul>
Rabe et al. 2006	<ul style="list-style-type: none"> <li>Intervention/ Control</li> </ul>	<ul style="list-style-type: none"> <li>3<sup>rd</sup> to 4<sup>th</sup> grade</li> <li>438 cases/299 control</li> </ul>	<ul style="list-style-type: none"> <li>EFNEP Youth Ohio</li> </ul>	<ul style="list-style-type: none"> <li>Increased in knowledge (Food Guide Pyramid; healthy choices and food safety)</li> </ul>	<ul style="list-style-type: none"> <li>4 lessons</li> <li>2-4x weeks</li> </ul>
Kemirembe et al. 2011	<ul style="list-style-type: none"> <li>Quasi-experimental design</li> <li>Pretest, posttest, post delayed test</li> </ul>	<ul style="list-style-type: none"> <li>5<sup>th</sup> to 7<sup>th</sup> grade</li> <li>43 cases/43 controls</li> </ul>	<ul style="list-style-type: none"> <li>EFNEP Youth Pennsylvania</li> </ul>	<ul style="list-style-type: none"> <li>Improvement in (1) nutrition knowledge; (2) nutrition behavior scores</li> </ul>	<ul style="list-style-type: none"> <li>5 lessons</li> <li>2-3 hours per 4 weeks</li> </ul>

We need more studies to show what EFNEP can do with 6-8 lessons

# Nutrition Education: Lessons from the Past

- **Is nutrition education effective?**

The reviews of evidence suggest nutrition education is effective overall even if not across the board on all individual studies

# Youth Evaluation: the literature and our practices

## Two questions today

- Is nutrition education for youth effective?
- **What elements of effectiveness would contribute to Youth EFNEP curricula & evaluation?**

# Nutrition Education School-aged Children

## Systematic Review – Contento 1995, 2002

### Elements of effectiveness

Educational strategies are directed at the behavior and based on *theory* and *evidence*

- specific 'how to' knowledge and skills
- motivations, beliefs, values, emotions
- personalized self-assessment, decision making, & behavioral change strategies

Content of lessons

1995: 40 studies; 2002: 74 studies

# Nutrition Education with School-aged Children

## Elements of effectiveness

Curriculum on healthy eating and PA

- Duration, intensity matter, 20-50 hrs
- Specific behaviors as goals; theory, evidence based.  
e.g. Specific behaviors on FV, not general.
- Active, participatory; tasting, food prep
- Attention to cultural and diversity issues; translations
- Attention to environment: teacher, school, family, community involvement

# School-based Interventions: Mediator analysis

Why is this important to EFNEP? This analysis gives us the effective mediators of behavior change. i.e. Identifies content of lessons.

- **Outcome expectations** (Child's beliefs about outcomes):  
provides the motivation for change.
- **Self-efficacy:**  
'How to' knowledge and skills; self-assessment & goal-setting  
Also behavior specific experiences & activities  
Example: F&V with links to FRM, FS, labels fruit juice, FV at fast food PA, sedentary behaviors.

What is not important for behavior change? General knowledge. Why?



Cerin, Barnett, Baranowski, JNEB 2009; Conteno's IOM talk 2013

# Activity: Focus on Children's Behaviors

- Look at the handout on your table. The committee wants your input to build on our work.
- Using Part 1, we would like your perceptions of the importance of these behaviors on youth health outcomes, i.e., those behaviors important for health.
- Using Part 2, rate the behaviors you think EFNEP can impact.





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# EFNEP Youth Evaluation Tools: Best Practices

On Pace to  
Win the Race

*“We have to demonstrate that it  
(programming) is data-driven.”*

*Dr. Sonny Ramaswamy*

*February 25, 2014*

# Best Practice

*A practice which is most appropriate under the circumstances; a technique or methodology that, through experience and research, has reliably led to a desired or optimum result.*

# Instructions

- “Elect” a note taker
- Share best practices, how to:
  - Train (1<sup>st</sup> round)
  - Implement (2<sup>nd</sup> round)
  - Connect (3<sup>rd</sup> round)
- Share resources (name/university)
- Move to a fresh table when prompted
- Discuss next topic

# Implementation of the Tools

- How do you administer the tool?
- Who administers the tool?
- How do you match up pre- and post-?
- Resources to share?

# Training on the Tools

- What techniques do you use for training?
  - In person, on-line, role playing, etc.
- Resources to share?

# Connecting the Tools to What You Teach

- What enhancements have you made to curricula related to the learning objectives the tools test on?
- Resources to share?



Questions?

Thank you.