Applications of the CDC–National Park Service Healthy Foods Evaluation for State and Local Parks

Stephen Onufrak, PhD
Epidemiologist, Division of Nutrition, Physical Activity & Obesity
Healthy Parks Healthy People US Initiative

In April 2011, National Park Service (NPS) Director announced service-wide Healthy Foods Strategy to provide healthy food options for all 280 million national park visitors annually.

- Collaborate with CDC to conduct a baseline assessment of food environment in national parks.
- Develop & implement health and sustainability guidelines for concessions contracts.
- Track effect of health promotion messaging and access to healthy foods over time so NPS can make informed decisions.
- Serve as a model for state and local parks & other open spaces.
CDC–NPS Nutrition Environment Collaboration

- **CDC Lead**: LCDR Alyson Goodman, MD, MPH
- **CDC Supervisor**: CAPT Heidi Blanck, PhD
- **NPS Office of Public Health**: CDR David Wong, MD, MPH
- **NPS Chief of Concessions**: Kurt Rausch
May Pilot (Epi-Aid)

- Pilot of survey tools adapted from NEMS
  - NEMS = Nutrition environment measures surveys
  - Validated instruments for objectively assessing access, pricing & promotion of healthy/unhealthy foods

- 11 national parks in Southwest US

- Dissemination:
  - APHA poster presentation
  - White House Summit on Healthy Foods in Parks
May Pilot Results: Beverage Vending

<table>
<thead>
<tr>
<th>Machine Contents</th>
<th>Mean (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion of “healthy” drinks</td>
<td>18% (+0.08)</td>
</tr>
<tr>
<td>Proportion of “diet” drinks</td>
<td>17% (+0.01)</td>
</tr>
<tr>
<td>Proportion of “sugar” drinks</td>
<td>65% (+0.04)</td>
</tr>
</tbody>
</table>

“Healthier” Vending Machine = Proportion of sugar drinks <50%

In this sample, 7 out of 41 (17%)

Derived Variables
Healthy drink: Water, milk, 100% juice
Diet drink: artificially-sweetened soda, tea, water, energy or sports drink
Sugar drink: sugar-sweetened soda, tea, water, energy or sports drink
# May Pilot Results – Restaurants

<table>
<thead>
<tr>
<th>Restaurant Characteristics (n=26 restaurants)</th>
<th>% (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signs promoting healthy items</td>
<td>8 (8)</td>
</tr>
<tr>
<td>Signs promoting unhealthy items</td>
<td>28 (8)</td>
</tr>
<tr>
<td>Signs promoting sustainable items</td>
<td>35 (12)</td>
</tr>
<tr>
<td>≥1 entrée on menu labeled as healthy</td>
<td>19 (15)</td>
</tr>
<tr>
<td>≥1 salad with ≤2 unhealthy ingredients</td>
<td>42 (10)</td>
</tr>
<tr>
<td>Whole wheat bread available</td>
<td>62 (10)</td>
</tr>
</tbody>
</table>
### May Pilot Results – Kids Menus

<table>
<thead>
<tr>
<th>Kids Menu Characteristics (n=15 restaurants)</th>
<th>% (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 1 healthy entree</td>
<td>60 (15)</td>
</tr>
<tr>
<td>Nutrition information posted</td>
<td>0 (0)</td>
</tr>
<tr>
<td>100% juice portion &lt; 6 ounces</td>
<td>15 (15)</td>
</tr>
<tr>
<td>Low-fat milk available</td>
<td>50 (21)</td>
</tr>
<tr>
<td>Flavored milk available</td>
<td>86 (9)</td>
</tr>
<tr>
<td>Free refills on unhealthy drinks</td>
<td>50 (19)</td>
</tr>
</tbody>
</table>
Mean price per ounce of drinks sold in 17 NPS stores at 11 pilot national parks, May 2011
September Field Investigation

- Nationally-representative sample of parks

- 50 parks chosen based on:
  - # annual visitors
  - Region
  - Urban/rural
  - Type of concessioners

- Identified 33 individuals to survey 50 parks in 35 states
  - EISOs (3 headquarters and 14 state-based) - 17
  - DNPAO, NPS, state/local health department staff & partners - 15
  - CDC Experience Fellow – 1

- Training
  - NEMS website
  - 90 minute webinar
National Parks Survey in September

Alaska: Glacier Bay, Denali

Surveyed (n=49)

National Park (n=395)
September Results: Beverage Vending

<table>
<thead>
<tr>
<th>Machine Contents</th>
<th>Mean (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion of “healthy” drinks</td>
<td>26% (+0.03)</td>
</tr>
<tr>
<td>Proportion of “diet” drinks</td>
<td>17% (+0.01)</td>
</tr>
<tr>
<td>Proportion of “sugar” drinks</td>
<td>57% (+0.03)</td>
</tr>
</tbody>
</table>

“Healthier” Vending Machine = Proportion of sugar drinks < 50%
In this sample, 29 out of 83 (35%)

Derived Variables
Healthy drink: Water, milk, 100% juice
Diet drink: artificially-sweetened soda, tea, water, energy or sports drink
Sugar drink: sugar-sweetened soda, tea, water, energy or sports drink

DRAFT: Analysis ongoing
## September Results – Kids Menus

<table>
<thead>
<tr>
<th>Kids Menu Characteristics (n=50 restaurants)</th>
<th>% (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 1 healthy entree</td>
<td>54 (10)</td>
</tr>
<tr>
<td>Nutrition information posted</td>
<td>0 (0)</td>
</tr>
<tr>
<td>100% juice portion &lt; 6 ounces</td>
<td>19 (6)</td>
</tr>
<tr>
<td>Low-fat milk available</td>
<td>49 (9)</td>
</tr>
<tr>
<td>Flavored milk available</td>
<td>46 (9)</td>
</tr>
<tr>
<td>Free refills on unhealthy drinks</td>
<td>77 (7)</td>
</tr>
</tbody>
</table>

_DRAFT: Analysis ongoing_
Assessment Tools

- Standardized with protocols
- 5 modules:
  - Restaurants
  - Snack Shops
  - Vending Machines
    - Beverage
    - Foods
  - Stores
    - Grocery
    - Convenience
  - Water

Rating Water Sources:

<table>
<thead>
<tr>
<th>Type of source</th>
<th>Date</th>
<th>Time</th>
<th>Operating?</th>
<th>Temp</th>
<th>Photo</th>
<th>In/Out</th>
<th>Appearance of Device</th>
<th>Relative Accessibility</th>
<th>Proximity (200 ft)</th>
<th>GPS Coordinates, Location Description &amp; Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>WF</td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WS</td>
<td></td>
<td></td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td>Satisfactory Visible Dirty/Rust</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Please do NOT evaluate water from bathroom or other sinks

Date of evaluation: Please write the date that the rater completes the evaluation (ex: 9/10/2011)

Time of evaluation: Please write the time, including am/pm that the rater starts the measurement (e.g. 1:00pm, 10:15am)
### National Parks Nutrition Environment Survey

**BEVERAGE VENDING MACHINE**

10. Provide the number of buttons/slots, size and price for the following items:
   * " if more than one size available, report on the smallest sized item.

<table>
<thead>
<tr>
<th>Item Description</th>
<th># Slots/Buttons</th>
<th>Size</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Water (plain)</td>
<td>☐ ☐</td>
<td>☐ ☑oz</td>
<td>☐ ☑</td>
</tr>
<tr>
<td>b. Artificially sweetened water drink (&lt;10 cals/8 oz)</td>
<td>☐ ☐</td>
<td>☐ ☑oz</td>
<td>☐ ☑</td>
</tr>
<tr>
<td>c. 100% fruit juice</td>
<td>☐ ☐</td>
<td>☐ ☑oz</td>
<td>☐ ☑</td>
</tr>
<tr>
<td>d. Fruit-flavored drink (not 100% juice)</td>
<td>☐ ☐</td>
<td>☐ ☑oz</td>
<td>☐ ☑</td>
</tr>
<tr>
<td>e. Diet soda</td>
<td>☐ ☐</td>
<td>☐ ☑oz</td>
<td>☐ ☑</td>
</tr>
<tr>
<td>f. Non-diet soda</td>
<td>☐ ☐</td>
<td>☐ ☑oz</td>
<td>☐ ☑</td>
</tr>
<tr>
<td>g. Diet sports drink</td>
<td>☐ ☐</td>
<td>☐ ☑oz</td>
<td>☐ ☑</td>
</tr>
<tr>
<td>h. Sports drink</td>
<td>☐ ☐</td>
<td>☐ ☑oz</td>
<td>☐ ☑</td>
</tr>
<tr>
<td>i. Diet energy drink</td>
<td>☐ ☐</td>
<td>☐ ☑oz</td>
<td>☐ ☑</td>
</tr>
<tr>
<td>j. Non-diet energy drink</td>
<td>☐ ☐</td>
<td>☐ ☑oz</td>
<td>☐ ☑</td>
</tr>
<tr>
<td>k. Diet tea drink</td>
<td>☐ ☐</td>
<td>☐ ☑oz</td>
<td>☐ ☑</td>
</tr>
<tr>
<td>l. Non-diet tea drink</td>
<td>☐ ☐</td>
<td>☐ ☑oz</td>
<td>☐ ☑</td>
</tr>
<tr>
<td>m. Flavored milk</td>
<td>☐ ☐</td>
<td>☐ ☑oz</td>
<td>☐ ☑</td>
</tr>
<tr>
<td>n. Skim/1% fat unflavored cow's milk</td>
<td>☐ ☐</td>
<td>☐ ☑oz</td>
<td>☐ ☑</td>
</tr>
<tr>
<td>o. Other</td>
<td>☐ ☐</td>
<td>☐ ☑oz</td>
<td>☐ ☑</td>
</tr>
</tbody>
</table>

Total number of slots (add # of slots from a to o) ☐ ☐

11. Is nutrition information posted on or near the vending machines for beverage items?
   - ☐ yes, for all items
   - ☐ yes, only healthy items
   - ☐ no
### Assessment Tools – Snack Shops

**National Parks Nutrition Survey**

**SNACK SHOPS—DATA COLLECTION**

<table>
<thead>
<tr>
<th>Park ID:</th>
<th>Snack Shop ID:</th>
<th>Date:</th>
<th>Rater ID:</th>
</tr>
</thead>
</table>

#### Menu Review (continued)

8) Is 100% wheat or whole grain bread available?  
   - [ ] yes  
   - [ ] no  
   - [ ] N/A  

9) Fruits (without added sugar)  
   - [ ] yes  
   - [ ] no  
   - [ ] # choices

10) Non-fried vegetables (without sauce)  
    - [ ] yes  
    - [ ] no  
    - [ ] # choices

11) French fries  
    - [ ] yes  
    - [ ] no  
    - [ ] # choices

#### Grab and Go items

12) a. Regular chips  
    - [ ] yes  
    - [ ] no  
    - Size [ ] oz/g  
    - Price $[ ]

   b. Baked chips or low-fat pretzels  
    - [ ] yes  
    - [ ] no  
    - Size [ ] oz/g  
    - Price $[ ]

13) a. Candy bar  
    - [ ] yes  
    - [ ] no  
    - Size [ ] oz/g  
    - Price $[ ]

   b. Healthy* granola/energy bar  
    - [ ] yes  
    - [ ] no  
    - Size [ ] oz/g  
    - Price $[ ]

14) Healthy* snack items:  
    - [ ] Dried fruit  
    - [ ] Trail mix  
    - [ ] Nuts  
    - [ ] Seeds  
    - [ ] Jerky  
    - [ ] Low-fat cookies  
    - [ ] Bagels  
    - [ ] Granola bars  
    - [ ] Energy bars  

   - [ ] # of varieties

* Healthy as defined by nutrition criteria in protocol

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![Image of a snack shop](image-url)
Android Phone Application
Sources of Free Drinking Water in Parks

Water source type:

- Not Selected
- Water fountain
- Water cooler
- Water spigot
GPS Settings

Select latitude field
25:Latitude

Select longitude field
26:Longitude

Set
Sources of Free Drinking Water in Parks

Water source type: Water fountain

Time of evaluation: 04:51:00

Operating? Yes

3 oz. filling time: 2.5

Temperature: 74.2

Photo:

Appearance of Device
- Satisfactory
- Visible Dirt / Rust
- Not Drumming
- Otherwise Unappealing

Relative Accessibility
- Visitor Center
- Campground
- Other Populous Area
- Trail
- Scenic Vista

Proximity (< 20 ft.)
- Vending
- Bathroom
- Building

Description and comments:
- Cades Cove

Latitude: 35.60335
Longitude: -83.77613
Healthy Parks Healthy People US Initiative

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Study Applications

- Dissemination of results/lessons learned from the CDC–NPS assessments & experience
- Adaptation of tools for state/local parks, recreation areas & public open spaces
  - Pilot in 2012
- Tools planned to be available online for partners in 2012
Please contact me with:

- **Current health promotion work in state/local parks, recreation areas or public open spaces**
- **Interest in piloting/applying assessment tools**

**Stephen Onufrak, PhD**  
770-488-5551  
seo5@cdc.gov

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For more information please contact Centers for Disease Control and Prevention  

1600 Clifton Road NE, Atlanta, GA 30333  
Telephone, 1-800-CDC-INFO (232-4636)/TTY, 1-888-232-6348  
E-mail: cdcinfo@cdc.gov  
Web: www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.