



Appendix

Nutrition Environment Measures Survey in Stores (NEMS-S):
Development and Evaluation
(Glanz K, Sallis J, Saelens B, Frank L, *Amer J Prev Med* 2007)

In this appendix, you will find the following:

- NEMS-S Measurement Forms (store measures survey)
- NEMS-S Protocol (instructions on how to complete the survey)
- NEMS-S Rationale (explanation of the items in the survey)
- NEMS-S Scoring (explanation of scoring system)

Using the Measures – and Training

You can obtain the NEMS-S tools, protocol and rationale here. There is no charge for using the measures, but appropriate acknowledgment should be given. Also, we encourage you to consider attending one of our NEMS trainings to receive hands-on practice and instruction on the tools. The training is free, but participants are responsible for travel costs. The study demonstrated the tool to be reliable and supported its validity, but solid training on how to complete the tool is necessary to ensure reliability. The training workshops also provide guidance on identification of stores in a defined area, data analysis, quality assurance, and related issues. You can learn more about the NEMS trainings and training dates by visiting our website at www.sph.emory.edu/NEMS. Online training will be available in the future.

Modifications

The NEMS-S tool may be adapted or tailored to your project/research goals and to the community/ies that you are assessing. However, if you decide to modify the measures, we strongly encourage you and others to pre-test it to make sure that the modifications work (i.e., everyone understands and can properly complete them, and that the measures identify variation in what you're examining). These modifications could consist simply of changing the brand name of bread that is more common to your area, or more substantial changes such as adding a new measure to the stores tool. Do not be alarmed if it takes multiple attempts to arrive at the modifications that you ultimately use.

A few examples of modifications that others have done:

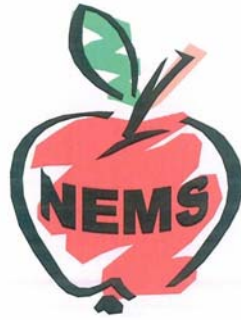
- A community group assessing stores in a Filipino community added some fruits and vegetables commonly eaten in Filipino households, changed the brand of bread, and added low sodium and regular soy sauce.
- An investigator added some items including soy milk, chicken, and some low sodium items, such as low sodium and regular chicken noodle soup.

Please share with us any modifications that you may decide to do, so we can share it with others.

If you have any questions, please contact us at nems-project@sph.emory.edu.

Source: Glanz K, Clawson M, Young M, Carvalho M. *Nutrition Environment Measures Training Manual*. Atlanta: Emory University, 2006.

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NEMS-S

Measurement Forms

**Nutrition Environment Measures Survey (NEMS)
Measure #2: FRUIT**

Rater ID:

Store ID: - -

Date: / /
Month Day Year

Grocery Store Convenience Store Other

Availability and Price

Produce Item	Available		Price	Unit #	Unit pc lb	Quality		Comments	
	Yes	No				A	UA		
1. Bananas	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
2. Apples	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
	<input type="radio"/> Red delicious <input type="radio"/> _____								_____
3. Oranges	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
	<input type="radio"/> Navel <input type="radio"/> _____								_____
4. Grapes	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
	<input type="radio"/> Red seedless <input type="radio"/> _____								_____
5. Cantaloupe	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
6. Peaches	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
7. Strawberries	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
8. Honeydew Melon	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
9. Watermelon	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
	<input type="radio"/> Seedless <input type="radio"/> _____								_____
10. Pears	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
	<input type="radio"/> Anjou <input type="radio"/> _____								_____

11. **Total Types:** (Count # of yes responses)

Nutrition Environment Measures Survey (NEMS)
Measure #3: VEGETABLES

Rater ID:

Store ID: - -

Date: / /
Month Day Year

Grocery Store Convenience Store Other

Availability and Price

Produce Item		Available		Price	Unit #	Quality		Comments		
		Yes	No			A	UA			
1. Carrots	<input type="radio"/> 1 lb bag <input type="radio"/> _____	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
2. Tomatoes	<input type="radio"/> Loose <input type="radio"/> _____	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
3. Sweet Peppers	<input type="radio"/> Green bell peppers <input type="radio"/> _____	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
4. Broccoli	<input type="radio"/> Bunch <input type="radio"/> _____	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
5. Lettuce	<input type="radio"/> Green leaf <input type="radio"/> _____	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
6. Corn		<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
7. Celery		<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
8. Cucumbers	<input type="radio"/> Regular <input type="radio"/> _____	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
9. Cabbage	<input type="radio"/> Head <input type="radio"/> _____	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
10. Cauliflower		<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____

11. Total Types: (Count # of yes responses)

**Nutrition Environment Measures Survey (NEMS)
MEASURE #4: GROUND BEEF**

Rater ID:

Store ID: - -

Date: / /
Month Day Year

Grocery Store Convenience Store Other

Availability and Price

Item	Available			Price/lb.	Comments
	Yes	No	N/A		

Healthier option:

1. Lean ground beef, **90% lean, 10% fat** (Ground Sirloin) Yes No N/A \$. _____

Alternate Items:

2. Lean ground beef, (<10% fat) Yes No N/A \$. _____
 % fat _____

3. Ground Turkey, (≤10% fat) Yes No N/A \$. _____
 % fat _____

4. # of varieties of lean ground beef (≤10% fat) 0 1 2 3 4 5 6+

Regular option:

5. Standard ground beef, **80% lean, 20% fat** Yes No N/A \$. _____

Alternate Item:

6. Standard alternate ground beef, if above is not available Yes No N/A \$. _____
 % fat _____

**Nutrition Environment Measures Survey (NEMS)
MEASURE #7: BAKED GOODS**

Rater ID:

Store ID: - -

Date: / /
Month Day Year

Grocery Store Convenience Store Other

Availability & Price

Low-fat baked goods $\leq 3g$ fat/serving

Item	Available		Amt. per package	g fat/ per item	kcal/ per item	Price	Comments
	Yes	No					

Healthier option:

1. Bagel Single Yes No \$ _____

Package	Available			Amt. per package	g fat/ per item	kcal/ per item	Price	Comments
	Yes	No	N/A					
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>	\$ <input type="text"/> <input type="text"/> <input type="text"/>	_____

Alternate Items:		Available			Amt. per package	g fat/ per item	kcal/ per item	Price	Comments
		Yes	No	N/A					
2. English muffin		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>	\$ <input type="text"/> <input type="text"/> <input type="text"/>	_____
3 a. Low-fat muffin	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>	\$ <input type="text"/> <input type="text"/> <input type="text"/>	_____
b. # varieties of low fat muffins		<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3+				

Regular option ($\geq 4g$ fat/serving or 400 Kcal/serving):

4. Regular muffin Yes No \$ _____

Alternate Items:		Available			Amt. per package	g fat/ per item	kcal/ per item	Price	Comments
		Yes	No	N/A					
5. Regular Danish		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>	\$ <input type="text"/> <input type="text"/> <input type="text"/>	_____
6. Other		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>	\$ <input type="text"/> <input type="text"/> <input type="text"/>	_____

**Nutrition Environment Measures Survey (NEMS)
MEASURE #8-CS: BEVERAGE**

Rater ID:

Store ID: --

Date: / /
Month Day Year

Grocery Store Convenience Store Other

Availability & Price

Healthier option:

	Available	Available		Price	Comments
		Yes	No		
1. Diet Coke	12 oz.	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	_____
	20 oz.	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	_____

2. Alternate brand of diet soda		Available			Price	Comments
		Yes	No	N/A		
<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	12 oz.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	_____
<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	20 oz.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	_____

Regular option:

	Available	Available		Price	Comments
		Yes	No		
3. Coke	12 oz.	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	_____
	20 oz.	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	_____

4. Alternate brand of sugared soda		Available			Price	Comments
		Yes	No	N/A		
<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	12 oz.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	_____
<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	20 oz.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	_____

Healthier option:

5. 100% juice, 15.2 oz.	Available	Available		Price	Comments
		Yes	No		
<input type="radio"/> Minute Maid <input type="radio"/> Tropicana <input type="radio"/> Other		<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	_____

6. 100% juice, 14 oz.	Alternate Items:	Available			Price	Comments
		Yes	No	N/A		
<input type="radio"/> Minute Maid <input type="radio"/> Tropicana <input type="radio"/> Other		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	_____
7. 100% juice, <input type="text"/> oz.	<input type="radio"/> Minute Maid <input type="radio"/> Tropicana <input type="radio"/> Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	_____

Regular option:

8. Juice Drink, 15.2 oz	Available	Available		Price	Comments
		Yes	No		
<input type="radio"/> Minute Maid <input type="radio"/> Tropicana <input type="radio"/> Other		<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	_____

9. Juice Drink, 14 oz.	Alternate Items:	Available			Price	Comments
		Yes	No	N/A		
<input type="radio"/> Minute Maid <input type="radio"/> Tropicana <input type="radio"/> Other		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	_____
10. Juice Drink, <input type="text"/> oz.	<input type="radio"/> Minute Maid <input type="radio"/> Tropicana <input type="radio"/> Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	_____

**Nutrition Environment Measures Survey (NEMS)
MEASURE #8-GS: BEVERAGE**

Rater ID:

Store ID: - -

Date: / /
Month Day Year

Grocery Store Convenience Store Other

Availability & Price

Healthier option:	Available size	Available			Price	Comments
		Yes	No			
1. Diet Coke	12 pack 12 oz.	<input type="radio"/>	<input type="radio"/>		\$ <input type="text"/> <input type="text"/>	
	6 pack 12 oz.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/>	<input type="text"/>
2. Alternate brand of diet soda		Yes	No	N/A		
<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	12 pack 12 oz.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/>	<input type="text"/>
<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	6 pack 12 oz.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/>	<input type="text"/>

Regular option:		Yes	No		
3. Coke	12 pack 12 oz.	<input type="radio"/>	<input type="radio"/>		\$ <input type="text"/> <input type="text"/>
	6 pack 12 oz.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/>
4. Alternate brand of sugared soda		Yes	No	N/A	
<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	12 pack 12 oz.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/>
<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	6 pack 12 oz.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/>

Healthier option:		Yes	No		
5. Minute Maid 100% juice, (64 oz., half gallon)		<input type="radio"/>	<input type="radio"/>		\$ <input type="text"/> <input type="text"/>
Alternate Items:		Yes	No	N/A	
6. Tropicana 100% juice, (64 oz., half gallon)		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/>
7. Other: <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/>

Regular option:		Yes	No		
8. Minute Maid juice drink, (64 oz., half gallon)		<input type="radio"/>	<input type="radio"/>		\$ <input type="text"/> <input type="text"/>
Alternate Items:		Yes	No	N/A	
9. Tropicana juice drink, (64 oz., half gallon)		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/>
10. Other: <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> <input type="text"/>

Nutrition Environment Measures Survey (NEMS)
MEASURE #9: BREAD

Rater ID:

Store ID: - -

Date: / /
Month Day Year

Grocery Store Convenience Store Other

Availability & Price

Item	Available	Loaf size	Price/loaf	Comments
	Yes No N/A	(ounces)		

Healthier Option: Whole grain bread (100% whole wheat bread and whole grain bread)

1. Nature's Own 100% Whole Wheat Bread \$. _____

Alternate Items:

2. Sara Lee Classic 100% Whole Wheat Bread \$. _____

3. Other:
 \$. _____

4. # of varieties of 100% whole wheat bread and whole grain (all brands) 0 1 2 3 4 5 6+

Regular Option: White bread (Bread made with refined flour)

5. Nature's Own Butter Bread \$. _____

Alternate Items:

6. Sara Lee Classic White Bread \$. _____

7. Other:
 \$. _____

Nutrition Environment Measures Survey (NEMS)
MEASURE #10: BAKED CHIPS

Rater ID:

Store ID: - -

Date: / /
Month Day Year

Grocery Store Convenience Store Other

Availability & Price

Low-fat chips \leq 3g fat/serving

Item	Available	Price	Comments
------	-----------	-------	----------

Healthier Option :

Yes No

1. Baked Lays Potato Chips

Yes No

\$.

1 1/8 oz. 10 oz.

2 1/8 oz. Other _____ oz.

5 1/2 oz.

Alternate Item:

Yes No N/A

2.

Yes No N/A

\$.

1 1/8 oz. 10 oz.

2 1/8 oz. 12 oz.

5 1/2 oz. Other _____ oz.

3. # of varieties of low-fat chips (any brand) 0 1 2 3 4 5 6+

Regular Option (select most comparable size to healthier option available):

Yes No

4. Lays Potato Chips Classic

Yes No

\$.

1 1/2 oz. 11 1/2 oz.

2 3/4 oz. 20 oz.

5 oz. Other _____ oz.

Alternate Item:

Yes No N/A

5.

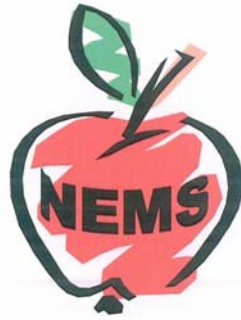
Yes No N/A

\$.

1 1/2 oz. 11 1/2 oz.

2 3/4 oz. 20 oz.

5 oz. Other _____ oz.



NEMS-S Protocol

NUTRITION ENVIRONMENT MEASURES SURVEY (NEMS)

STORE MEASURES

SURVEY INSTRUCTIONS

These measures are designed to rate the nutrition environments of grocery and convenience stores. There are other establishments that may offer food products to purchase that fall into an exclusions category (see below) and may be enumerated but not necessarily rated. However, based on your survey purposes, you may decide to set different exclusion criteria.

Exclusions

Establishments that are not open to the general public, or those where you have to pay a charge just to enter. Establishments that sell a limited variety of food and are not mainly food or convenience stores.

- Sam's Club
- Costco
- Drug stores (CVS, Walgreen's, etc.)

Instructions

The basic principle of these measures is to gather information on comparable items across stores and types of food, so when possible, rate items within the same brand or exactly as specified.

Layout

The majority of the measures have a similar layout.

1. There are "healthier" and "regular" options listed. The healthier option is always listed first.
2. Bold thick lines divide the healthier and regular options.
3. For the measures that have healthier and regular options, the preferred item, which is the item that you would ideally like to rate if it is available, is listed first. The preferred item is followed by alternate items that are in shaded grey boxes.
4. For the milk and frozen dinner measures, there is a section titled "Reference Brand". This refers to the brand name of the food items that will be rated.
5. There is a Measure Complete box at the top right of each page for you to mark when you have completed a measure.

Time

1. Complete grocery store measures between 9 am and 4 pm. (This helps to ensure that items have been stocked for the day and are not sold out.)
2. Complete convenience store measures before 4:30 pm or after 6 pm. (This helps to ensure that you are not in the way during a busy time as these stores are small.)

Availability

1. Before recording any information, first look for the preferred healthier item and the comparable regular item of the same brand.
2. If only one is available, look for the first healthier alternate listed to see if a comparison within the same brand is possible.

3. Once a comparable pair is identified, record the information. You may choose to include recording the information for the one item that is available, in addition to the alternate comparable pair information. If so, write in comments “no comparable pair”.
4. If a comparable pair cannot be found, record a healthier and regular item that are as similar as possible.
 - ❖ If an item is sold out, write “sold out” in the Comments section and record any available information. Continue down the list until an item is available or the list has been exhausted.

Pricing

1. If price is not available, ask an employee at the cash register or at customer service. Wait until all of the measures have been completed before asking the price of the items that are needed. There may be exceptions to this (i.e., you are in the produce section and there is no price shown but an employee is working there), so use your judgment.
2. Do not use a sale price unless it is the only price posted and write “sale price” in comments.

Preparation

At the top of each page, fill in the following:

- ❖ Rater ID
- ❖ Store ID
- ❖ Type of store (Grocery, Convenience or Other)
“Other” would be specialty stores such as meat markets, green grocers, health stores, etc.
- ❖ Date

Cover Page

On the cover page, fill in the following:

- ❖ Start time (when you enter the store)
- ❖ End time (when you have finished the measures and reviewed them for completeness)
- ❖ Number of cash registers in the store (including any at the pharmacy or customer service). Each checkout register should be counted, even if a clerk is not there at the time of your visit. For stores that have a self checkout area, include only the cash register(s) serving the self checkout stations.

General Completion Tips

Remember to follow the tips below to decrease the data cleaning time later.

1. Write legibly.
2. Check your work.
3. Use the correct line/bubble.

For Those Whose Forms will be Scanned

The surveys will be scanned on a machine that is very picky, so please remember to do the following:

1. **Darken** your circles once you are sure of the answer.
2. Press down when writing letters or numbers so they are legible and dark.
3. Write your comments and notes on the lines provided.
4. Do not cross through any individual items or sections.
5. Erase any stray marks you make.

Measure #1: MILK

Milk Definitions

- a. Low-fat milk – skim/fat-free and 1%
- b. Reduced fat milk – 2%
- c. Whole milk – full fat (3.25%)

Measurement Procedures

- Find the milk aisle in the store.
- Look for the store brand as it is the preferred brand. If **available**, mark “yes”.

Store brand (preferred)	<input type="radio"/> Yes	<input type="radio"/> No
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- If there is no store brand, mark “no” and look for the brand with the most shelf space. If there is equal shelf space for different brands, select the one that has a brand name closest to the beginning of the alphabet (e.g., Foremost instead of Parmalat). Write the name of the brand in the space provided. This brand is now the reference brand for this measure since the store brand was not available.

Alternate Brand Name:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>																				

- Using the reference brand, look for low-fat milk (skim or 1%). If **available**, mark “yes” and then mark “N/A” for the 2% available question.
- If low-fat milk is not available, mark “no” and look for 2%. Mark whether or not it is available.
- Shelf space:** Complete **only** if low-fat milk is available. Count and record the **number** of columns of each requested milk item (pint of skim, quart of skim, etc.) for the reference brand. Count only columns that have (any) milk there, but not empty slots where it may need to be restocked. If there are none of a particular item, write “0” in the box.

Shelf space:												
Type	Pint	Quart	Half gallon	Gallon								
a. Skim	<table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>			<table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>			<table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>			<table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>		
b. 1%	<table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>			<table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>			<table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>			<table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>		
c. Whole	<table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>			<table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>			<table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>			<table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>		

- Record the **price** of a quart and a half-gallon of whole milk of the reference brand.
 - ❖ If the reference brand does not have milk available in the quart or half-gallon size, select another brand similar in price and write its name in comments.
- Continuing to use the reference brand, record the price of a quart and a half-gallon of the lowest fat milk available (meaning choose skim milk first; if not available, choose 1%). Mark “N/A” for the alternate items.
- If there is no low-fat milk available, record the price of a quart and a half-gallon of 2% of the reference brand.

Measure #2: FRUIT

Measurement Procedures

Produce Item	Available		Price	#	Unit		Quality		Comments
	Yes	No			pc	lb	A	UA	
1. Bananas	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> . <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<hr/> <hr/>
2. Apples	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> . <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<hr/> <hr/>
<input type="radio"/> Red delicious <input type="radio"/> _____	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> . <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<hr/> <hr/>

1. Find the produce department in the store.
2. Look for the fruit listed. If it is **available**, mark the bubble next to it.
3. If it is not available and there is a line below it for an alternate item, look for the cheapest similar alternate. Write it down and mark the bubble next to it. For example, if there are no Red delicious apples and Gala apples are the cheapest alternate, write “Gala” on the line below “Red delicious”.
4. If the fruit or alternate is available, mark “yes”. If it is not available, mark “no”. If the item is sold out, write “sold out” in comments and record the available information.
 - ❖ If the fruit is only available as pre-sliced and in a container, still mark “yes” for available and write “pre-cut in container” and any size information in comments.
 - ❖ If the fruit is available but mixed with other fruit in a container, mark “no” for available but note the fruit cup contents, price and size in comments.
5. Record the regular **price** of the fruit. If it is on sale and the regular price is not posted, see if it can be calculated based on the sale price label (i.e., add the sales price and the “you save” price) and record it. If the regular price cannot to be calculated based on the sale price label, just record the sale price.
 - ❖ Always choose the pound to price if there is an option.
6. Write the **quantity (#)** of the fruit that is listed **for the price**. For example, if the sign says 2 for \$1.00, write “2” for the quantity. If the sign says 3 lbs for 99¢, write “3” for the quantity.
 - ❖ If the fruit is not loose but packaged (e.g., pint or container), count the quantity as “1” and write the quantity of the package in comments.
7. Indicate if the price of the fruit is calculated by the piece or pound by marking “pc” or “lb”. For example, if the sign says 2 for \$1.00, mark “pc” for piece. If the sign says 3 lbs for 99¢, mark “lb” for pound.
 - ❖ If packaging is other than pc/lb (e.g., per pint or bunch), mark “pc” and note under comments.

Measure #2: FRUIT (cont.)

8. Record the **quality** of the item by marking “A” for acceptable or “UA” for unacceptable.
 - ❖ Acceptable = peak condition, top quality, good color, fresh, firm and clean
 - ❖ Unacceptable = bruised, old looking, mushy, dry, overripe, dark sunken spots in irregular patches or cracked or broken surfaces, signs of shriveling, mold or excessive softening
 - ❖ The rating is based on the majority (>50%) of fruits. If it seems difficult to decide whether to mark “A” or “UA”, mark “UA” and describe in comments.
9. After completing the information for the 10 fruit items, count the number that are marked “yes” under available and record the total.

11. Total Types: (Count # of yes responses)

Measure #3: VEGETABLES

Measurement Procedures

Produce Item	Available		Price	#	Unit		Quality		Comments
	Yes	No			pc	lb	A	UA	
1. Carrots <input type="radio"/> 1 lb bag <input type="radio"/> _____	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> . <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____

1. Find the produce department in the store.
2. Look for the vegetables listed. If it is **available**, mark the bubble next to it.
3. If it is not available and there is a line below it for an alternate item, look for a similar alternate. Write it down and mark the bubble next to it. For example, if there are no 1 lb bags of whole carrots but there are 2 lb bags, write “2 lb bag” on the line below “1 lb bag”.
 - ❖ For carrots, look for whole carrots. Only select baby or precut carrots as a last resort and make a note in comments.
 - ❖ For tomatoes, look for the least expensive loose tomatoes (regular size) first. If not available, look for tomatoes packaged. Choose tomatoes on the vine or cherry tomatoes as a last resort and make a note in comments.
4. If the vegetable or alternate is available, mark “yes”. If it is not available, mark “no”. If the item is sold out, write “sold out” in comments and record the available information.
5. Record the regular **price** of the vegetable. If it is on sale and the regular price is not posted, see if it can be calculated based on the sale price label (i.e., add the sales price and the “you save” price) and record it. If the regular price cannot to be calculated based on the sale price label, just record the sale price.
 - ❖ If the vegetable is not specifically listed as packaged (e.g., corn or celery) but is sold as packaged or loose, record the price of the one that is cheapest.
6. Write the **quantity (#)** of the item that is listed **for the price**. For example, if the sign says 2 for \$1.00, write “2” for the quantity. If the sign says 3 lbs for 99¢, write “3” for the quantity.
 - ❖ If the item is sold by the package (e.g., corn), count the quantity as “1” and write the number of the item included in the package in comments (e.g., 3 in package).
 - ❖ Always choose the pound to price if there is an option.
7. Indicate if the price of the item is by the piece or pound by marking “pc” or “lb”. For example, if the sign says 2 for \$1.00, mark “pc” for piece. If the sign says 3 lbs for 99¢, mark “lb” for pound.
 - ❖ If packaging is other than pc/lb (e.g., per pint or bunch), mark “pc” and note in comments.
 - ❖ If an item is packaged and its size is listed in pounds or equal to a pound, mark “lb” for pound.

Measure #3: VEGETABLES (cont.)

8. Record the **quality** of the item by marking “A” for acceptable or “UA” for unacceptable.
 - ❖ Acceptable = peak condition, top quality, good color, fresh, firm and clean
 - ❖ Unacceptable = bruised, old looking, mushy, dry, overripe, dark sunken spots in irregular patches or cracked or broken surfaces, signs of shriveling, mold or excessive softening
 - ❖ The rating is based on the majority (>50%) of fruits. If it seems difficult to decide whether to mark “A” or “UA”, mark “UA” and describe in comments.
9. After completing the information for the 10 vegetable items, count the number that are marked “yes” under available and record the total.

11. Total Types: (Count # of yes responses)

Measure #4: GROUND BEEF

Ground Beef Definitions:

- a. Lean ground beef: $\geq 90\%$ lean, $\leq 10\%$ fat
- b. Standard ground beef: 80% lean, 20% fat

Measurement Procedures

Item	Available			Price/lb.	Comments
	Yes	No	N/A		
Healthier option:					
1. Lean ground beef, 90%lean, 10% fat (Ground Sirloin)	<input type="radio"/>	<input type="radio"/>		\$ <input type="text"/> . <input type="text"/> <input type="text"/>	<hr style="border: 0; border-top: 1px solid black; margin-bottom: 5px;"/> <hr style="border: 0; border-top: 1px solid black;"/>

1. Find the fresh meat case in the store. If the store does not sell prepackaged meat, go to the butcher's case to look for ground beef.
2. Identify the brand of ground beef that occupies the most shelf space and for which there are both lean and regular options. Note that lean ground beef may be labeled "ground sirloin", but the label should indicate the % fat.
3. For the healthier option, locate the lean ground beef with 10% fat. If **available**, mark yes. Choose the package of lean ground beef closest to one pound. Record the **price per lb** listed and **not** the actual price of the package of meat (i.e., the label should have a price/lb and price. Record the price/lb.). Mark "N/A" for the alternate items.
 - ❖ In general, if only organic ground beef is available, look for an alternate. However, if alternates are not labeled and staff doesn't know % fat, go with the organic and write "organic" in comments.
4. If no lean ground beef with 10 % fat is available, mark "no" and look for lean ground beef with <10% fat. If available, write in the % fat (e.g., 7), mark "yes" and record the price per lb listed. Mark "N/A" for the remaining alternate item.
5. If no lean ground beef is available, look for ground turkey ($\leq 10\%$ fat). If available, write in the % fat, mark "yes" and record the price per lb listed.
6. Count and record the **number of varieties** of lean ground beef available, which includes both different brands and variety of % fat (e.g., 10%, 7%, 3%, etc.). Include any organic varieties as well.

of varieties of lean ground beef ($\leq 10\%$ fat) <input type="radio"/> 0 <input type="radio"/> 1-2 <input type="radio"/> 3-4 <input type="radio"/> 4-5 <input type="radio"/> 6+
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7. For the regular option, locate the standard ground beef with 20% fat. Repeat steps 3-4.

Measure #5: HOT DOGS

Hot Dog Definitions (Fat gram definitions are based on Oscar Mayer brand hot dogs.)

- a. Regular (≥ 12 g fat/serving)
 - i. Wiener – Mixed meat source
 - ii. Frank – All beef
- b. Light (≤ 7 g fat/serving)
 - i. Wiener – Mixed meat source
 - ii. Frank – All beef
- c. Fat-free Wiener– (0 g fat/serving)
- d. Turkey – (≤ 8 g fat/serving)

Measurement Procedures

Item	Available			Price/pkg	Comments
	Yes	No	N/A		
Healthier option:					
1. Oscar Mayer Fat-free Wieners (turkey/beef)	<input type="radio"/>	<input type="radio"/>		\$ <input type="text"/> . <input type="text"/> <input type="text"/>	_____

1. Find the hot dogs in the prepared meats section in the store.
2. For the healthier option, locate Oscar Mayer Fat-free wieners regular size. If **available**, mark “yes” and record the **price**. Mark “N/A” for the alternate items.
 - ❖ If only jumbo size is available, go to the first alternate item and look for regular size. Jumbo should be selected only if no other alternate in regular size is available. If jumbo is selected, complete information under “Other” and write “jumbo” in comments.
3. If Oscar Mayer Fat-free wieners are not available, mark “no” and look for an alternate brand of fat-free wieners. Write down the brand name. If available, mark “yes” and record the price. Mark “N/A” for the remaining alternate items.
4. If no alternate fat-free variety is available, mark “no” and continue down the alternate list until an item is available or the list is exhausted.
 - ❖ Note that an alternate “Other” item does **not** include soy-based hotdogs, bratwurst or other hotdog-like products.
5. For the regular option, look for Oscar Mayer wieners (turkey/pork/chicken). If available, mark “yes”, record the price, and mark “NA” for the alternates.
6. If Oscar Mayer wieners are not available, mark “no” and continue down the alternate list until an item is available or the list is exhausted.

Measure #6: FROZEN DINNER

Frozen Dinner Definitions:

- a. Reduced-fat frozen dinner = ≤ 9 g fat/serving (8-11 oz. package)
- b. Regular frozen dinner = ≥ 10 g fat/serving (8-11 oz. package)

Measurement Procedures

- Find the frozen dinners in the frozen food case.
- Look for Stouffer's® brand of frozen meals as the reference brand. If **available**, mark "yes".
- If not available, mark "no" and choose another brand that has both regular and reduced-fat entrees. Write the name of the brand in the space provided.

Alternate brand (with reduced-fat dinners available) Brand Name:

- Indicate whether reduced-fat frozen dinners (Stouffer's Lean Cuisine® or other) are available by marking "yes" or "no".
- Estimate the **proportion** of the reduced-fat compared to regular frozen dinners only for Stouffer's® or the alternate brand selected and mark either $\leq 10\%$, 11-33%, 34-50%, or 51%+. If there is only a reduced-fat option of a particular brand and not a regular version (e.g., Healthy Choice), estimate the proportion of the reduced-fat dinners compared to the regular across all brands.

Reduced-fat dinners/regular dinners: Proportion $\leq 10\%$ 11-33% 34-50% 51%+

- Look for Lean Cuisine® and Stouffer's® Lasagna, Roast Turkey Breast and Meatloaf frozen dinners. If a pair is **available**, write the **price**, **ounces** (oz), total **calories** (Kcal) and grams of **fat** (g fat). If ounces or grams of fat is not a whole number, round up or down accordingly (e.g., if $9 \frac{5}{8}$ oz, write "10").

Reduced Fat Dinner	Price/Pkg	Regular Dinner	Price/Pkg
Lean Cuisine Lasagna <input style="width: 20px;" type="text"/> oz. <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/> Kcal. <input style="width: 20px;" type="text"/> g fat	\$ <input style="width: 20px;" type="text"/> . <input style="width: 20px;" type="text"/>	Stouffer's Lasagna <input style="width: 20px;" type="text"/> oz. <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/> Kcal. <input style="width: 20px;" type="text"/> g fat	\$ <input style="width: 20px;" type="text"/> . <input style="width: 20px;" type="text"/>

- If only one of the regular or reduced-fat entrées is available or neither is available, look for an alternate pair of similar entrees to rate. Write the main item of the entrée on the line provided (e.g., chicken or meatballs) and record the price, ounces, total calories and grams of fat.
 - ❖ If there is no brand of reduced-fat frozen dinners, look at the nutritional information to see if any frozen dinners qualify as reduced fat (≤ 9 g fat). Pizza does not count.

Reduced Fat Alternate (≤ 9 g fat)	Regular Alternate (≥ 10 g fat)
Other _____ \$ <input style="width: 20px;" type="text"/> . <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/> oz. <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/> Kcal. <input style="width: 20px;" type="text"/> g fat	Other _____ \$ <input style="width: 20px;" type="text"/> . <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/> oz. <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/> Kcal. <input style="width: 20px;" type="text"/> g fat

- If there is a limited selection and no alternate pairs available, just record the information on what is available.

Measure #7: BAKED GOODS

Baked Goods Definitions

- a. Healthier items
 - i. Fat-free = 0 g fat/portion
 - ii. Low-fat = ≤ 3 g fat/portion
- b. Regular item: energy dense = >400 kcal/portion or >3 g fat/portion

Measurement Procedures

Item	Available		Amt. per	g fat/ per item	kcal/ per item	Price	Comments
	Yes	No	package				
Healthier option:							
Bagel							
Single	○	○		□□	□□□	\$□.□□	_____

1. Find the baked goods/pastries section in the store.
2. For the healthier option, locate the individually sold bagels. Choose a plain bagel to rate if possible. If **available**, mark “yes” and record the grams of **fat** and **calories** listed per bagel and the **price**. If grams of fat is not a whole number, round up or down accordingly (e.g., if 3.5 grams, write “4”). Mark “N/A” for the alternate items.
 - ❖ If an item does not have nutritional information, just record the price.
3. If individual bagels are not available, mark “no” and look for the smallest package of bagels. If available, mark “yes” and record the amount of bagels in the package, the grams of fat and calories listed per bagel, and the price.
 - ❖ For all of the baked goods, if more than one brand is available, use the brand that has the most shelf space of that item. If there are brands with equal shelf space, choose the brand with the name closest to the beginning of the alphabet.
4. If a package of bagels is not available, mark “no and continue down the list of alternates until an item is available or the list is exhausted.
 - ❖ If the alternate item is low-fat muffin:
 - **For grocery stores**, look for a pack of 4 low-fat muffins. If no 4 pack of low-fat muffins is available, choose the 6 pack. If no 6 pack is available, choose a smaller package. If regular and jumbo size muffins are available, choose the regular size. If only jumbo size muffins are available, write “jumbo” in comments.
 - **For convenience stores**, look for individually sold items (muffin and danish) first before packaged items. However, if the single muffins do not have nutritional information and a packaged one does, choose the packaged muffins.
 - ❖ Recording the nutritional information can be tricky as the serving size may not be equal to the entire item (e.g., the serving size may be only $\frac{1}{2}$ of the muffin). Be sure to calculate the nutritional information for the entire item.
5. If the low-fat muffin is the available item for the healthier option of the Baked Goods, count and record the **number of varieties** of low-fat muffins which includes both different brands and flavors (blueberry, banana nut, etc.).

Measure #7: BAKED GOODS (cont.)

6. For the regular option, look for a regular muffin. Follow the same procedures as for low-fat muffins. If available, mark “yes” and record the amount in a package, grams of fat per muffin, total calories per muffin and price. Mark “NA” for the alternate items.
7. If a regular muffin is unavailable, mark “no” and continue down the list of alternates.

Measure # 8-CS: BEVERAGE—CONVENIENCE STORES

Beverage Definitions

- a. Diet soda - 0 kcal
- b. Sugared soda – Regular
- c. 100% juice – Natural fruit juice with no added sugars. Container must say 100% fruit juice on label.
- d. Juice drink – Fruit juice with added sugar and water

Measurement Procedures

Soda	Available Yes No	Price	Comments
Healthier option:			
Diet Coke	12 oz. <input type="radio"/> <input type="radio"/>	\$ <input type="text"/> . <input type="text"/> <input type="text"/>	_____
	20 oz. <input type="radio"/> <input type="radio"/>	\$ <input type="text"/> . <input type="text"/> <input type="text"/>	_____

For the Soda:

- Find the chilled beverage section in the store.
- For the healthier option, locate the 12 oz can and 20 oz bottle of Diet Coca Cola (Diet Coke). If **available**, mark “yes” and record the **price**. Then mark “N/A” for the alternate item.
- If the 12 oz can or 20 oz bottle is not available, mark “no” and look for an alternate brand of diet soda. Choose the brand with the most shelf space. If there are brands with equal shelf space, choose the brand with the name closest to the beginning of the alphabet. Write in the brand name, mark “yes” and record the price.
- For the regular option, look for same brand and size of sugared soda to compare.

For the Juice:

- For the healthier option, look for a 15.2 oz bottle of Minute Maid 100% juice first, then Tropicana, then Other. If **available**, mark the brand and “yes” for available, and record the **price**. Mark “NA” for the alternate items.

Juice	Available Yes No	Price	Comments
100% juice, 15.2 oz.	<input type="radio"/> <input type="radio"/>	\$ <input type="text"/> . <input type="text"/> <input type="text"/>	_____
<input type="radio"/> Minute Maid <input type="radio"/> Tropicana <input type="radio"/> Other			

- If no 15.2 oz bottle of 100% juice is available, mark “no” and determine if a 14 oz. bottle of Minute Maid 100% juice is available, then Tropicana and then Other. If available, mark the brand and “yes” for available and record the price. Mark “NA” for the alternate item.
- If no 14 oz bottle of 100% juice is available, mark “no” and locate an alternate size of 100% juice (e.g. 12 oz). Look for the Minute Maid brand of 100% juice first, then Tropicana, then Other. If available, mark the oz bubble and record the size of the bottle in ounces. Then, mark the brand and “yes” for available and record the price.
- For the regular option, look for the same brand and size of a juice drink to compare. If not available, choose a comparable option in size and price.

Measure # 8-GS: BEVERAGE – GROCERY STORES

Beverage Definitions:

- a. Diet soda - 0 kcal
- b. Sugared soda – Regular soda
- c. 100% juice – Natural fruit juice with no added sugars. Container must say 100% fruit juice on label.
- d. Juice drink – Fruit juice with added sugar and water

Measurement Procedures

Soda	Available size	Available Yes No		Price	Comments
Healthier option:					
Diet Coke	12 pack 12 oz..	<input type="radio"/>	<input type="radio"/>	\$ <input type="text"/> . <input type="text"/> <input type="text"/>	_____

For the Soda:

1. Find the beverage aisle of the store.
2. For the healthier option, locate the 12 pack (12 oz cans) of Diet Coca Cola (Diet Coke). If **available**, mark “yes”, record the **price** and mark “N/A” under the alternate items.
3. If the 12 pack is not available, mark “no” and then locate the 6 pack of Diet Coke, marking “yes” for available and recording the price. Mark “N/A” under the alternate items.
4. If the 6 pack of Diet Coke is not available, mark “no” and look for an alternate brand of diet soda. Choose the brand with the most shelf space. If there are brands with equal shelf space, choose the brand with the name closest to the beginning of the alphabet. Write in the name of the alternate brand of diet soda. Mark “yes” if a 12 pack is available and record the price.
5. If a 12 pack of the alternate brand of diet soda is not available, mark “no” and then write in the name of the alternate brand of diet soda. Mark “yes” if a 6 pack is available and record the price.
6. For the regular option, look for same brand and size of sugared soda to compare.

For the Juice:

1. Find the refrigerated juice section in the store.
2. For the healthier option, locate the half gallon size (64 oz) of Minute Maid 100% juice. If **available**, mark “yes”, record the **price** and mark “N/A” under the alternate items.
3. If Minute Maid is not available, mark “no” and look for the half gallon size of Tropicana 100% juice. If available, mark “yes”, record the price and mark “N/A” for the remaining alternate item.
4. If Tropicana is not available, mark “no” and choose the brand with the most shelf space. If there are brands with equal shelf space, choose the brand with the name closest to the beginning of the alphabet. Write the brand name of the juice drink. Mark “yes” if the half gallon size is available and record the price.
5. For the regular option, look for the same brand of a juice drink to compare. If not available, choose a comparable option.

Measure #9: BREAD

Bread Definitions

- a. Healthier: 100% whole wheat and whole grain bread
- b. Regular: Bread made with refined flour

Measurement Procedures

Item	Available			Loaf size (ounces)	Price/loaf	Comments
	Yes	No	N/A			
Healthier option:						
Nature's Own 100% Whole Wheat Bread	<input type="radio"/>	<input type="radio"/>		□□	\$□.□□	_____

1. Find the bread aisle in the store.
2. For the healthier option, locate Nature's Own 100% Whole Wheat Bread.
3. If Nature's Own 100% Whole Wheat Bread is **available**, mark "yes".
4. Record the **size** in ounces and **price** of the loaf. If the size is not a whole number, round up or down accordingly (e.g., if it is 22 1/8, then write 22).
5. If Nature's Own is not available, mark "no" and look for Sarah Lee's 100% Whole Wheat Bread. If that is available, mark "yes" and record the size and price.
6. If Sarah Lee's is not available, mark "no" and choose the brand with the most shelf space. If there is equal shelf space for different brands, select the one that has a brand name closest to the beginning of the alphabet (e.g., Colonial instead of Sunbeam).
7. Write its name, size and price.
8. Count and record the **number of varieties** of 100% whole wheat bread and whole grain bread, which includes both different brands and types (100% whole wheat, 100% honey whole wheat, etc.) but does **not** include different sizes of the same bread.

of varieties of 100% whole wheat bread and whole grain (all brands) <input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6+
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9. Repeat steps 2-6 for the comparable regular option, looking for the same brand that was available for the healthier option if possible. If the same brand is not available for the regular option, choose a comparable option.

Measure #10: BAKED CHIPS

Baked Chips Definitions

- a. Healthier items:
 - i. Fat-free = 0 g fat/serving
 - ii. Low-fat = ≤ 3 g fat/ per 1 oz. serving
- b. Regular items: > 3 g fat/ per 1 oz. serving

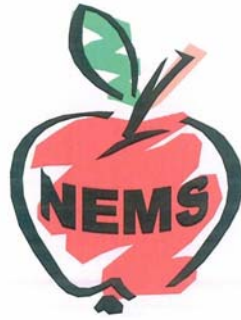
Measurement Procedures

Item	Available			Price	Comments
	Yes	No	N/A		
Healthier option:					
Baked Lays Potato Chips	<input type="radio"/>	<input type="radio"/>		\$ <input type="text"/> . <input type="text"/> <input type="text"/>	_____
<input type="radio"/> 1 1/8 oz.		<input type="radio"/> 10 oz.			
<input type="radio"/> 2 1/8 oz.		<input type="radio"/> Other _____ oz.			
<input type="radio"/> 5 1/2 oz.					

1. For **grocery stores**, go to the MAIN chips/snacks aisle. For **convenience stores**, find where the smallest size packages of chips are located.
2. For the healthier option, locate Baked Lays® Potato Chips and mark the smallest size that is **available** (Do not choose chips that come in multi-packs). If none of the sizes listed is available, mark “other” and write the size that is available.
3. If Baked Lays® are not available, mark “no” and look for an alternate chips item that has **≤ 3 g fat per one ounce serving** (Baked Doritos does not meet this criteria; however, if no other baked chips are available, look for the fat-free potato chips made with Olestra). Write the name and mark “yes” under available.
4. Record the **price** of the Baked Lays® or the alternate item.
5. Count and record the **number of varieties** of low-fat chips (**≤ 3 g fat per one ounce serving**), which includes different brands (Lays, Ruffles, etc.) and flavors (Plain, Ranch, BBQ, etc.) and type of chip (corn, potato, etc). The chips with Olestra count as well. It does **not** include different sizes of the same chip.

# of varieties of low-fat chips (any brand)	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6+
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6. Repeat steps 2-4 for the comparable regular option, looking for the same brand and size that was available for the healthier option.



NEMS-S Rationale

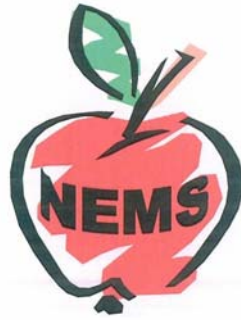
NEMS
Rationale for Store Measures Criteria

Listed below is an explanation as to the rationale for each of the measures on the stores survey.

Topic	Basis for Criteria
Milk	<p>FDA criterion of ≤ 3 gm fat/serving was used in distinguishing the healthier option (non-fat or 1% milk)</p> <p><i>Source: US Food and Drug Administration, A Food Labeling Guide, Appendix A, http://vm.cfsan.fda.gov/~dms/flg-6a.html, accessed November 2004.</i></p>
Fruits and Vegetables	<p>In order to determine the top selling types of fruits and vegetables in the US, we consulted:</p> <p><i>Sources:</i></p> <ul style="list-style-type: none"> • <i>Produce for Better Health Foundation, "Top 20" list, based on results from 2000 A.C. Nielson Survey</i> • <i>FoodReview, Vol. 25, Issue 3, published by Economic Research Service, USDA</i> <p>We eliminated potatoes from the vegetable list to be consistent with the 5-A-Day guidelines and most nutrition epidemiological research and because of their caloric density relative to other vegetables.</p>
Ground Beef	<p>Standard ground beef available in supermarkets today, although slightly leaner than 20 years ago, is typically 80% lean/20% fat by weight. Pan-broiled, a 3-oz. patty contains 209 calories, 14 g fat (60% of calories from fat), 5 g saturated fat. USDA reported that in 2001, ground beef comprised 43% of total beef intake and placed per capita consumption at 29 lbs. per year per person. This would translate to 2000 calories and 134 g fat per week, on average, for those who choose standard ground beef. Health experts recommend that people choose lean beef. While leaner varieties of ground beef are becoming more popular, they are more costly than those with higher fat content and may not be readily available to some consumers.</p> <p><i>Sources:</i></p> <ul style="list-style-type: none"> • <i>Ground Beef Nutrient Comparisons, USDA, Agricultural Research Service, 2002. USDA Nutrient Database for Standard Reference, Release 15. Available at http://www.beef.org/documents/Grd%20Beef%20Comps_18-211%20for%20bn.pdf, accessed December 2004.</i> • <i>Average Annual Per Capita Consumption of Beef Parts and Ground Beef, 1980-2001, www.beef.org/documents/NCBA_STATS_May2004.XLS</i> • <i>Using the Dietary Guidelines for Americans, USDA Center for Nutrition Policy and Promotion.</i>

	<p>We chose the healthier option as 90% lean/10% fat, because it contains half the fat of regular ground beef 80% lean/20% fat. Leaner options (<10% fat) are not readily available, even in supermarkets (although we agree they would be healthier choices); therefore, comparing the availability of these two options (10% vs. 20% fat) should distinguish one food outlet from another.</p> <p>Sources:</p> <ul style="list-style-type: none"> • <i>Ground Beef Nutrient Comparisons, USDA, Agricultural Research Service, 2002. USDA Nutrient Database for Standard Reference, Release 15</i> • <i>Georgia Beef Board</i>
Hot Dogs	<p>We chose hot dogs as a measure, because of their vast popularity in the US (The Meat Marketing Institute reported that in 2003, 837 million packages were sold in retail stores) and because most hot dogs contain 10-15 g fat each (up to 80% of calories from fat). One hot dog typically provides almost one-third of the recommended saturated fat for the day.</p> <p>Sources:</p> <ul style="list-style-type: none"> • www.nutritiondata.com • <i>American Dietetic Association, July 11, 2004, http://www.eatright.org/Public/index_19637.cfm, Accessed December 2004.</i> • <i>National Hot Dog and Sausage Council, www.hot-dog.org, Accessed December 2004.</i> <p>Our preference for a healthier hot dog is fat-free, but fat contents up to 8 g. fat/serving (1/3 less fat) are noted. We chose Oscar-Mayer as the reference food because it is nationally available and produces hot dogs with several different levels of fat. Also, when possible, we recorded mixed meat or turkey hot dog availability and price, because beef hot dogs are more expensive.</p> <p>Source:</p> <ul style="list-style-type: none"> • <i>Robert Earl, Senior Director, Nutrition Policy, National Food Processors Association, Washington DC, 20005 www.kraftfoods.com</i>
Frozen Dinners	<p>We chose Stouffer's as the reference food, because the company sells both regular and low-fat dinners. We chose very common varieties, e.g., roasted turkey breast, that had regular and low-fat options.</p> <p>Sources:</p> <ul style="list-style-type: none"> • <i>Robert Earl, Senior Director, Nutrition Policy, National Food Processors Association, Washington DC, 20005</i> • <i>Stouffer's, www.stouffers.com and www.leancuisine.com</i>

Baked Goods	<p>FDA criterion was used to identify the healthier option, ≤ 3 g fat/serving. Energy dense items were either more than 3 g fat/serving or >400 kcal/portion (as packaged).</p> <p>Source: <i>US Food and Drug Administration, A Food Labeling Guide, Appendix A</i>, http://vm.cfsan.fda.gov/~dms/flg-6a.html, accessed November 2004.</p>
Beverages	<p>We are comparing the availability and relative cost of diet vs. sugared soft drinks, and 100% juice vs. juice drinks.</p> <p>Source: <i>Dietary Guidelines for Americans, USDA Center for Nutrition Policy and Promotion (Limit your intake of beverages... high in added sugars.)</i></p>
Whole Grain Bread	<p>Although there may be other breads that could be considered “whole grain”, we limited our recording to “100% whole wheat bread” for ease and accuracy of data collection.</p> <p>Source: <i>Dietary Guidelines for Americans, USDA Center for Nutrition Policy and Promotion (Include several servings of whole grain foods daily—such as whole wheat...)</i></p>
Baked Chips	<p>Potato chips are the most popular snack food for adults and children with 985 million pounds of potato chips purchased in supermarkets, drugstores and mass merchandising outlets.</p> <p>Source: <i>Economic Research Service, US Department of Agriculture, Are Americans Turning Away From Lower Fat Salty Snack Foods, Food Review, 25, 3:38-4.</i> http://www.ers.usda.gov/publications/FoodReview/DEC2002/frvol25i3f.pdf</p> <p>Chips must contain ≤ 3 gm fat/serving, in keeping with FDA’s definition of a low-fat food.</p> <p>Source: <i>US Food and Drug Administration, A Food Labeling Guide, Appendix A</i>, http://vm.cfsan.fda.gov/~dms/flg-6a.html, accessed November 2004.</p>



NEMS-S Scoring

Scoring Systems for NEMS Store Measures:

Grocery Stores & Convenience Stores – *scoring for individual stores*

	<u>Availability</u>	<u>Price</u>	<u>Quality</u>
1. Milk Higher for low-fat = -1 point	YES low-fat/skim = 2 points Proportion \geq 50% = 1 point	Lower for low-fat = 2 points Same for both = 1 point	- inap -
2. Fruit	< 5 varieties = 1 point 5-9 varieties = 2 points 10 varieties = 3 points	[no points; for comparison with convenience stores]	25-50% acceptable = 1 pt. 50-75% acceptable = 2 pts 75%+ acceptable = 3 pts
3. Vegetables	< 5 varieties = 1 point 5-9 varieties = 2 points 10 varieties = 3 points	[no points; for comparison with convenience stores]	25-50% acceptable = 1 pt. 50-75% acceptable = 2 pts 75%+ acceptable = 3 pts
4. Ground Beef	YES lean meat = 2 points 2-3 varieties < 10% fat = 1 points > 3 varieties < 10% fat = 2 points	Lower for lean meat = 2 points Higher for lean meat = -1 point	- inap -
5. Hot Dogs	YES fat-free available = 2 pts Light, but not fat-free = 1 point	Lower for fat-free = 2 points Higher for fat-free = -1 point If no fat-free & lower for light = 1 point	- inap -
6. Frozen Dinners	YES all 3 reduced-fat types = 3 pts YES 1 or 2 reduced-fat types = 2 pts	Lower for fat-free = 2 points Higher for reduced-fat = -1 point	- inap -
7. Baked Goods	YES low-fat items = 2 points	Lower for low-fat = 2 points Higher for low-fat = -1 point	- inap -

	<u>Availability</u>	<u>Price</u>	<u>Quality</u>
8. Beverages	YES 100% juice = 1 point	Lower for diet soda = 2 points Lower for 100% juice vs. Juice drinks = 1 point Higher for 100% juice = -1 point	- inap -
9. Bread	YES whole grain bread = 2 pts >2 varieties whole wt bread = 1 pt	Lower for whole wheat = 2 points Higher for whole wheat = -1 point	- inap -
10. Baked Chips	YES baked chips = 2 pts > 2 varieties baked chips = 1 pt	Lower for baked chips = 2 points Higher for baked chips = -1 point	- inap -
TOTAL POSSIBLE SCORE:	0 to 27 points (availability)	From -8 points to 17 points (price)	0 to 6 points (quality)

Total Summary Score: Up to 50 points possible (availability + price + quality)