

# Legibility of Nutrition Facts Panel and Ingredient Statement Images Captured Using the Apple iPad 2

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## Background

- Databases should be market-reflective
  - Updated regularly
  - Inclusive of brand name products
- Manufacturer websites have limitations
- Supermarket visits (“grocery store checks”) may be necessary



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## Grocery Store Checks

- Traditional methods
  - Hand recording
  - Use of photocopy machines
  - Purchase of products
- Labor intensive
- Expensive



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## Objective #1

**Conduct a qualitative evaluation of several hand held electronic devices to identify which might be feasible for capturing legible images of nutrition facts panel and ingredient statement information on brand name foods.**



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## Procedure

- Determined device capabilities and completed initial screening

- “Magic Wand” Handheld Scanner

- VuPoint Model PDS-ST410a-VP



- Digital Camera - Nikon Coolpix 3000



- Apple iPhone 3Gs



- Apple iPad 2







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## “Magic Wand”



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**You Will Need / Necesitará**

1½ Cups (375 mL)  **1½ Cups (375 mL)**  **3 Tablespoons (45 mL)**  **2 cup Cans (500 mL)** 

**1** Stir together in 16 inch skillet: sauced Pasta, Sauce Mix, hot water, milk, margarine and tuna. Heat to boiling, stirring occasionally.


**2** Reduce heat. Cover; simmer about 18 minutes, stirring occasionally, until pasta is tender. Remove from heat; season with salt, cracked, hotdogged lettuce.

**3** Bake together in 16 inch skillet: sauced Pasta, Sauce Mix, hot water, milk, margarine and tuna. Heat to boiling, stirring occasionally. Reduce heat. Cover; simmer about 18 minutes, stirring occasionally, until pasta is tender. Remove from heat; season with salt, cracked, hotdogged lettuce.

**Nutrition Facts**  
Serving Size: 1 cup or 250 g  
1 cup (250 g)  
Serving Per Container: 1

Amount Per Serving		% Daily Value*
<b>Calories</b>	130	26%
<b>Total Fat</b> 5g	10%	20%
Saturated Fat 3g	6%	12%
Trans Fat 0g	0%	0%
<b>Cholesterol</b> 10mg	2%	4%
<b>Sodium</b> 100mg	2%	4%
<b>Total</b>		
<b>Carbohydrate</b> 25g	5%	10%
Dietary Fiber 1g	2%	4%
Sugars 2g	4%	8%
<b>Protein</b> 2g	4%	8%
<b>Vitamin A</b>	4%	8%
<b>Calcium</b>	2%	4%
<b>Iron</b>	4%	8%
<b>Phosphorus</b>	2%	4%
<b>Total</b>		
<b>Calories from Fat</b>	45	35%

\*Percent Daily Values are based on a diet of other people's secrets.




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**Oven Directions / Instrucciones para horno**

**1** Heat oven to 425°F. In a large skillet, combine sauced pasta, sauce mix, hot water, milk, margarine and tuna. Heat to boiling, stirring occasionally. Reduce heat. Cover; simmer about 18 minutes, stirring occasionally, until pasta is tender. Remove from heat; season with salt, cracked, hotdogged lettuce.

**2** Bake together in 16 inch skillet: sauced Pasta, Sauce Mix, hot water, milk, margarine and tuna. Heat to boiling, stirring occasionally. Reduce heat. Cover; simmer about 18 minutes, stirring occasionally, until pasta is tender. Remove from heat; season with salt, cracked, hotdogged lettuce.



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<b>Iron</b>	4%	8%
<b>Phosphorus</b>	2%	4%

**1** Slice together in 16 inch skillet: sauced Pasta, Sauce Mix, hot water, milk, margarine and tuna. Heat to boiling, stirring occasionally.

**2** Reduce heat. Cover; simmer about 18 minutes, stirring occasionally, until pasta is tender. Remove from heat; season with salt, cracked, hotdogged lettuce.

**3** Bake together in 16 inch skillet: sauced Pasta, Sauce Mix, hot water, milk, margarine and tuna. Heat to boiling, stirring occasionally. Reduce heat. Cover; simmer about 18 minutes, stirring occasionally, until pasta is tender. Remove from heat; season with salt, cracked, hotdogged lettuce.



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## Digital Camera/Rounded Packages

The digital camera close-up mode worked better for rounded objects than the Magic Wand





# iPad 2 Camera



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## iPad 2 Advantages

- Excellent visibility of images
- Ease of user interface
  - Immediate viewing of image
  - Ability to manipulate image
- Multiple uses



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## Objective #2

**Conduct a quantitative evaluation of the ability of the iPad 2 to capture legible images of the front of the package, nutrition facts panel, and ingredient statement information for brand name foods.**



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## Methods

- Cross-sectional survey of candy, salad dressing, frozen entrees, and frozen pizza was conducted
- Systematically selected samples were collected from a Wal-Mart Supercenter in the Minneapolis metro area with the goal of sampling 25 products from each category



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## Procedure

- Pictures were taken of the nutrition facts panel and ingredient statement for each sampled product
- Legibility of the images was rated on a scale of 1 to 4
  - 1 - text was visible and easily legible
  - 4 - text was missing or illegible



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## Data Collection

- Product Name
- Product Category
  - Candy
  - Salad Dressing
  - Frozen Entrée
  - Frozen Pizza
- Number of Attempts and Legibility
  - Front of Package
  - Nutrition Facts Panel
  - Ingredient Statement
- Package Characteristics
  - Shape
  - Dimensions
  - Plastic, Glass, Paperboard
  - Flexible, Rigid
  - Surface Texture
    - Smooth/Rough
  - Reflective, Non-Reflective



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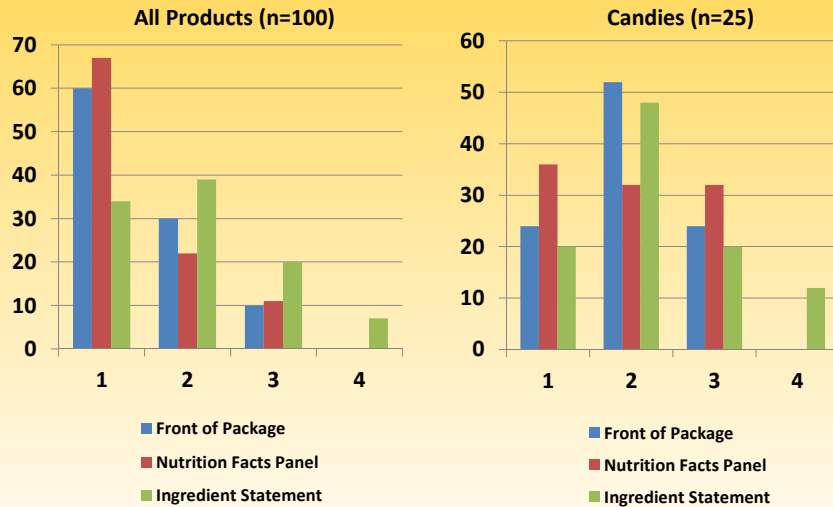
## Package Materials

Product Category	Plastic	Glass	Paperboard
	% (n)	% (n)	% (n)
All products (n=100)	54 (54)	3 (3)	43 (43)
Candies (n=25)	92 (23)	0 (0)	8 (2)
Salad dressings (n=25)	84 (21)	12 (3)	4 (1)
Frozen pizzas (n=25)	16 (4)	0 (0)	84 (21)
Frozen dinners (n=25)	24 (6)	0 (0)	76 (19)



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# Legibility Scores



# Conclusions

- The iPad 2 may be a valuable tool for nutrient database developers
- Use of digital technology may help database developers to keep pace with the large and dynamic marketplace

## Next Steps

- Utilize technology improvements
  - iPad Generation 3 – improved camera, retina display
  - Flexible scanners
- Evaluate use of optical character recognition (OCR) software
  - Allows conversion of images to text
  - Ability to copy data into Word or Excel



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## Questions?



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