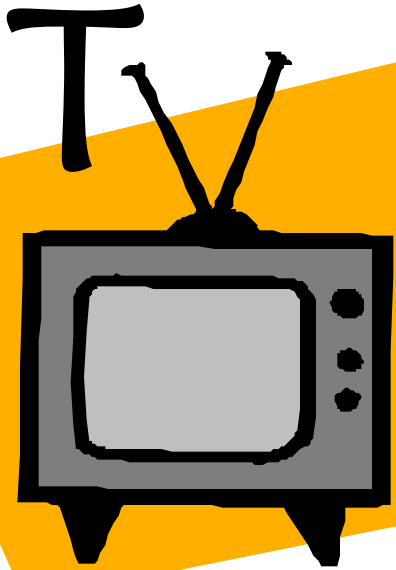


The



Diet

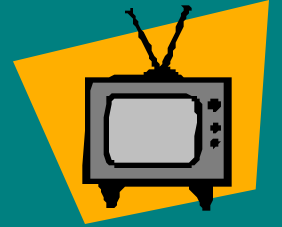
Food Choices Endorsed on American Television

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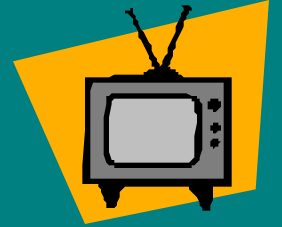
Background



- Obesity epidemic
- Toxic environment
- TV in America
 - Pervasive
 - Effective
- TV and Food
 - \$7.3 - \$11.26 billion in food ads
 - Direct link to health



Project Purpose



Study Purpose:

To assess the dietary intake endorsed on TV by critically analyzing the nutritional quality of advertised foods.

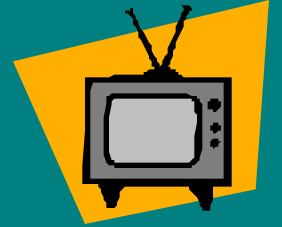
Research Questions:

1. How do the food group servings of foods observed in TV ads compare to the recommendations of the Food Guide Pyramid?
2. How does the nutrient content of foods observed in TV ads compare to the recommended Daily Values?
3. What are the health implications of food choices endorsed on televised food ads?



Methods

Improvements



- Data Collection

- Inconsistent data source (shows vs. ads)



- Food Groups

- Assignment to groups without regard to servings
- Inconsistency in food group categories (2-17 groups)
- No statistical comparisons to recommended servings
- Exclusion of combination foods

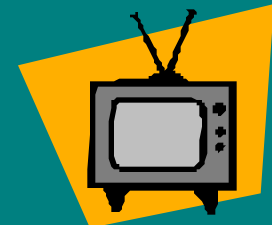


- Nutrients

- No statistical comparison to intake guidelines
- Only considered sodium, sugar, and fat

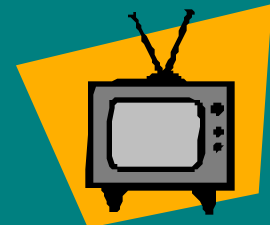


Sample Selection



- 28 consecutive days of viewing (Sept. 15 – Oct. 12, 2004)
- 96 hours
 - Prime time every night (8 pm – 11 pm)
 - Saturday mornings (8 am – 11 am)
- Rotated across ABC, CBS, FOX, and NBC
- All shows videotaped for later review

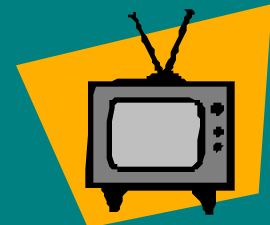
Content Observation



Viewed videotapes and recorded...

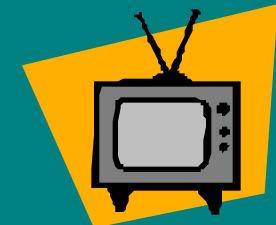
- For each 1/2-hour time slot
 - Start time
 - Name of show
 - Type of show
 - Day
 - Date
 - Network
- For each ad
 - Type of Ad
 - Featured food items
 - Sponsor name
- For each food item
 - Food group servings
 - Nutrient content
- Inter-observer reliability

Nutritional Profiles



Food Groups (servings)	Macronutrients (content)	Vitamins (content)	Minerals (content)
sugar fat meat dairy fruit vegetables grain	calories protein carbohydrates fiber fat cholesterol saturated fat trans fat	vitamin A vitamin C vitamin D vitamin E vitamin K thiamine (B1) riboflavin (B2) niacin (B3) pantothenic acid (B5) pyridoxine (B6) cobalamine (B12) biotin folate	calcium chromium copper iodine iron magnesium manganese molybdenum phosphorus potassium selenium sodium zinc

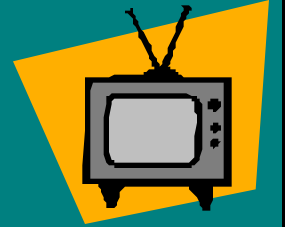
Food Group Analyses



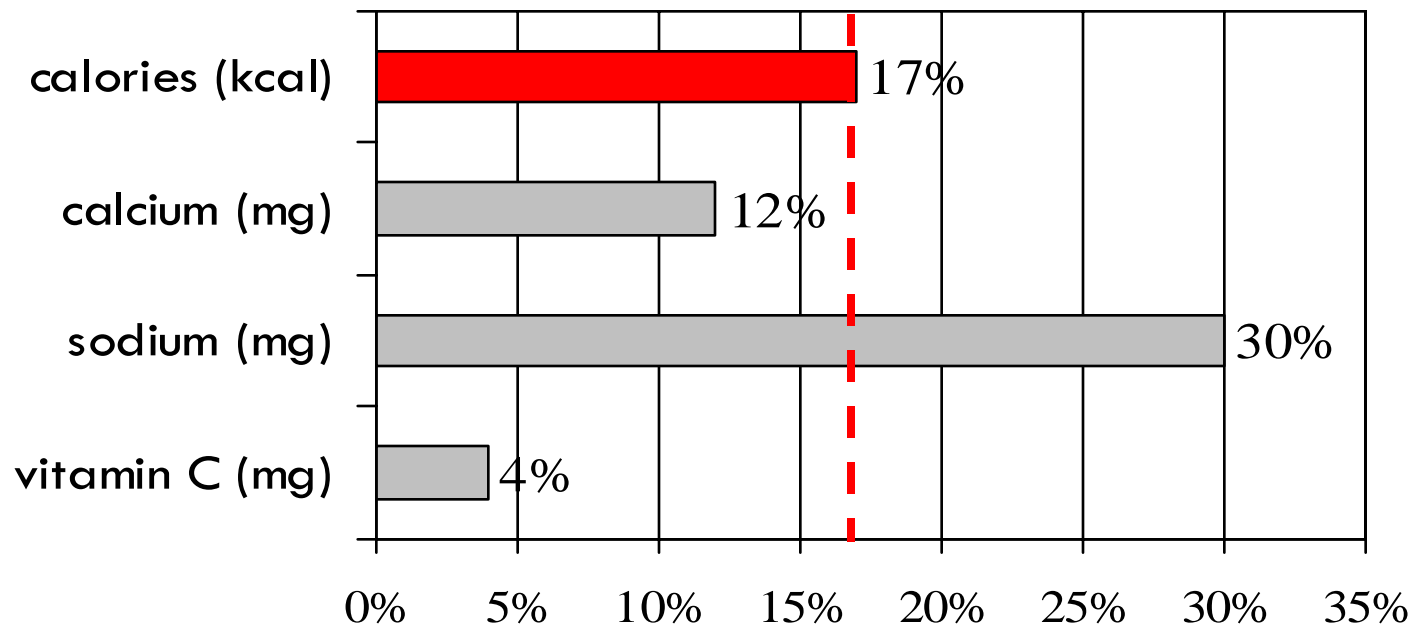
- Used one sample t-test to compare observed servings to RDS
- Required conversion of RDS to per-item expectations
 - Found RDS range midpoint
 - Found average number of items needed per day to meet calories
 - Set expected value as RDS midpoint divided by items per day

Food Group	RDS Range	RDS Midpoint	Expected Items/Day	Expected Value
Sugar	0-1	0.5	8	0.06
Fats	0-1	0.5	8	0.06
Meat	2-3	2.5	8	0.31
Dairy	2-3	2.5	8	0.31
Fruit	2-4	3.0	8	0.38
Vegetables	3-5	4.0	8	0.50
Grains	6-11	8.5	8	1.06

Nutrient Analyses



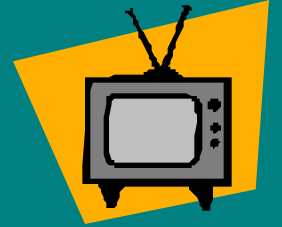
- Used one sample t-test to compare observed %DV to %DV for calories





Results

Summary Statistics



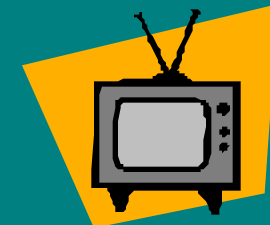
Observations

- 188 time slots in study
- 3,584 total ads
- 614 (17%) ads related to food
- 564 (91%) ads with food items
- 831 total food items

Reliability Test

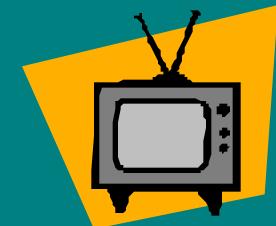
- Sample of 12 hours (12.5% of total)
 - Show titles 100% (12 of 12)
 - Show categories 100% (12 of 12)
 - Ad sponsors 94% (471 of 500)
 - Food items 94% (117 of 124)

Food Frequency

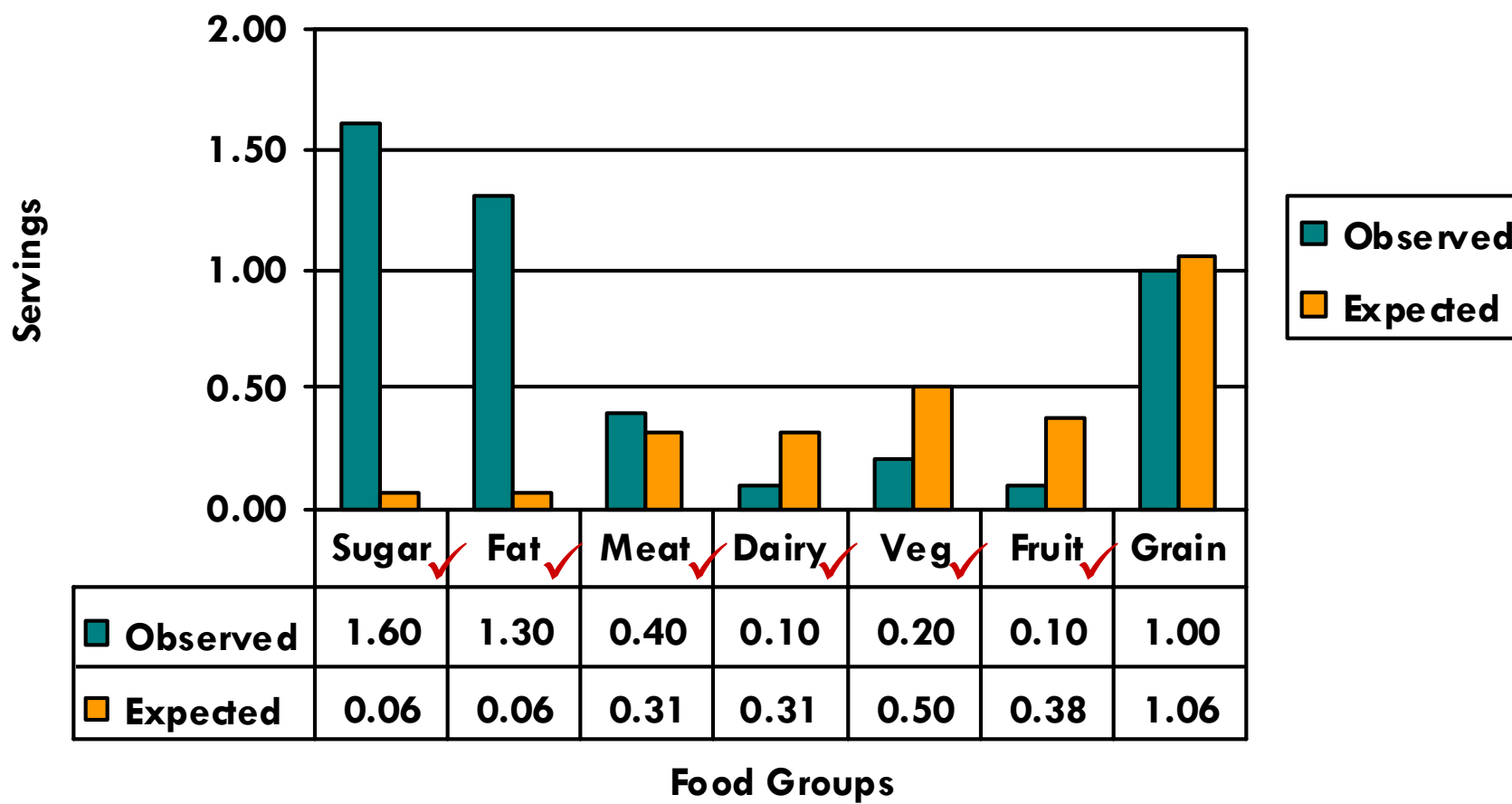


Rank	Sponsor	Freq.	% of Total	Food Items	Freq.	% of Total
1	McDonalds	36	6%	Pepsi regular soda	55	7%
2	Kentucky Fried Chicken	32	5%	KFC honey BBQ wings	23	3%
3	Wendy's	27	4%	Chewing gum	21	3%
4	Campbell's	22	4%	MD chicken selects w/sauce	18	2%
5	Kellogg	21	3%	Wendy's jr. bacon cheeseburger	18	2%
6	Burger King	20	3%	Breadsticks	16	2%
7	Subway	18	3%	Denny's breakfast slam	15	2%
8	Olive Garden	16	3%	Pizza hut pizza	14	2%
9	Denny's	15	2%	Cinnamon sticks	13	2%
10	Pizza Hut	14	2%	Olive garden pasta bar	12	1%
11	Piggly Wiggly	13	2%	Subway turkey sandwich	12	1%
12	Tie: Budweiser, Fruit 20, Pillsbury, Sonic, Taco Bell	12	2%	Tie: beef, pork and Wendy's chicken nuggets	11	1%
	Total:	614	100%	Total:	831	100%

Question 1: Food Group Servings

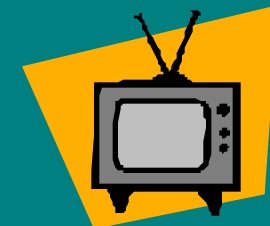


- Comparisons to guidelines



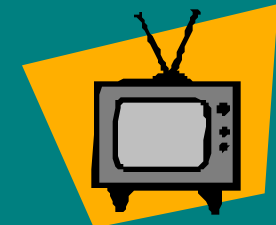
✓ Significant at $\alpha=0.05$

Question 2: Nutrient Content

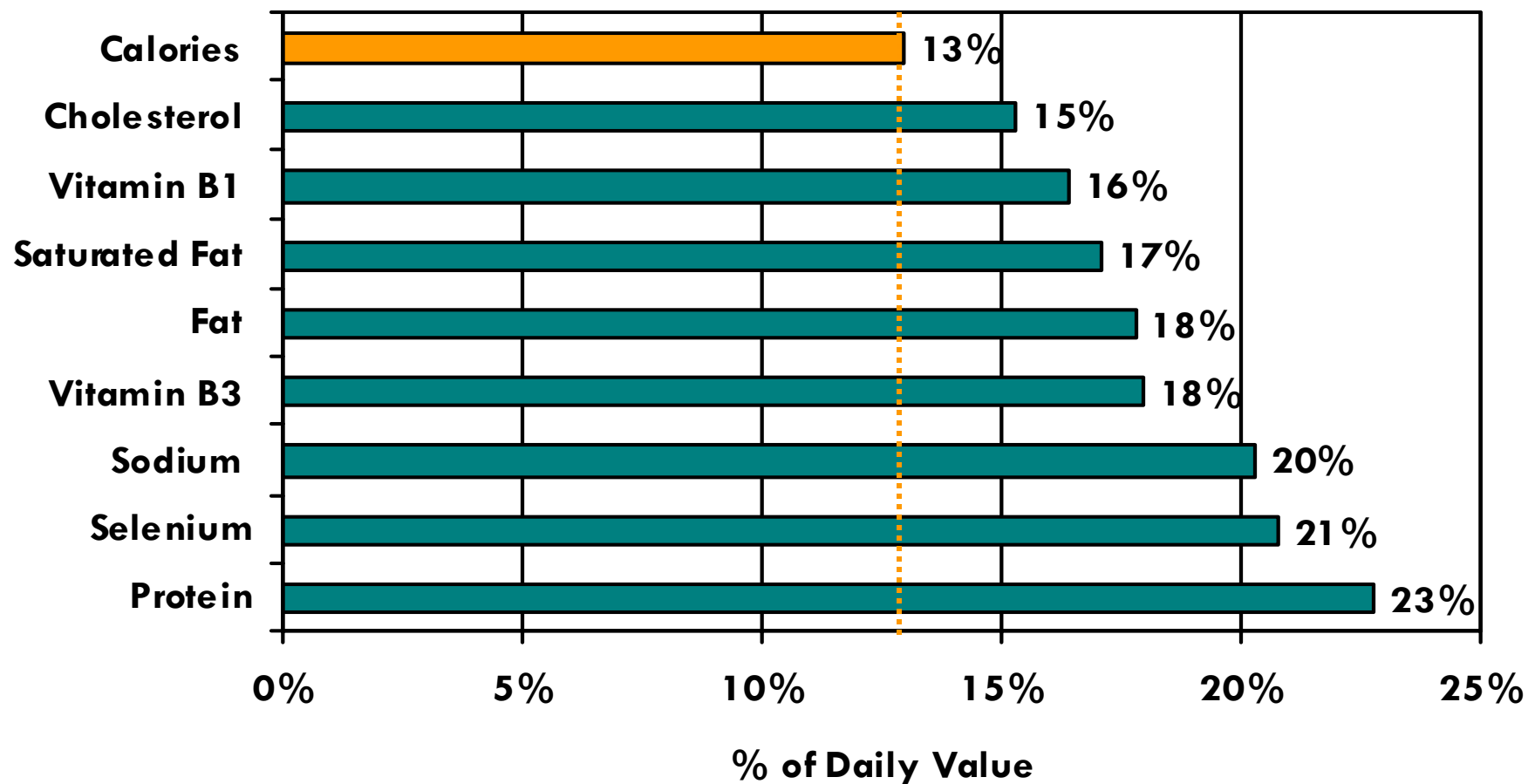


Nutrient	Percent of Food Items (n=775)	Nutrient	Percent of Food Items (n=775)	Nutrient	Percent of Food Items (n=775)
calories	100%	vitamin C	85%	B12	36%
protein	100%	caffeine	85%	B5	34%
carbs	100%	potassium	59%	vitamin E	34%
fat	100%	trans fat	51%	folate	34%
saturate fat	100%	Phosphorous	51%	mangenesse	33%
sodium	100%	vitamin D	43%	selenium	31%
fiber	99%	B1	41%	vitamin K	28%
cholesterol	98%	B2	41%	Iodine	14%
alcohol	89%	B3	39%	biotin	10%
iron	87%	magnesium	38%	chromium	9%
calcium	86%	zinc	37%	molybdenum	8%
vitamin A	85%	copper	36%	fluoride	7%

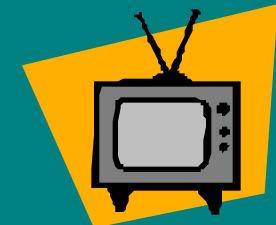
Question 2: Nutrient Content



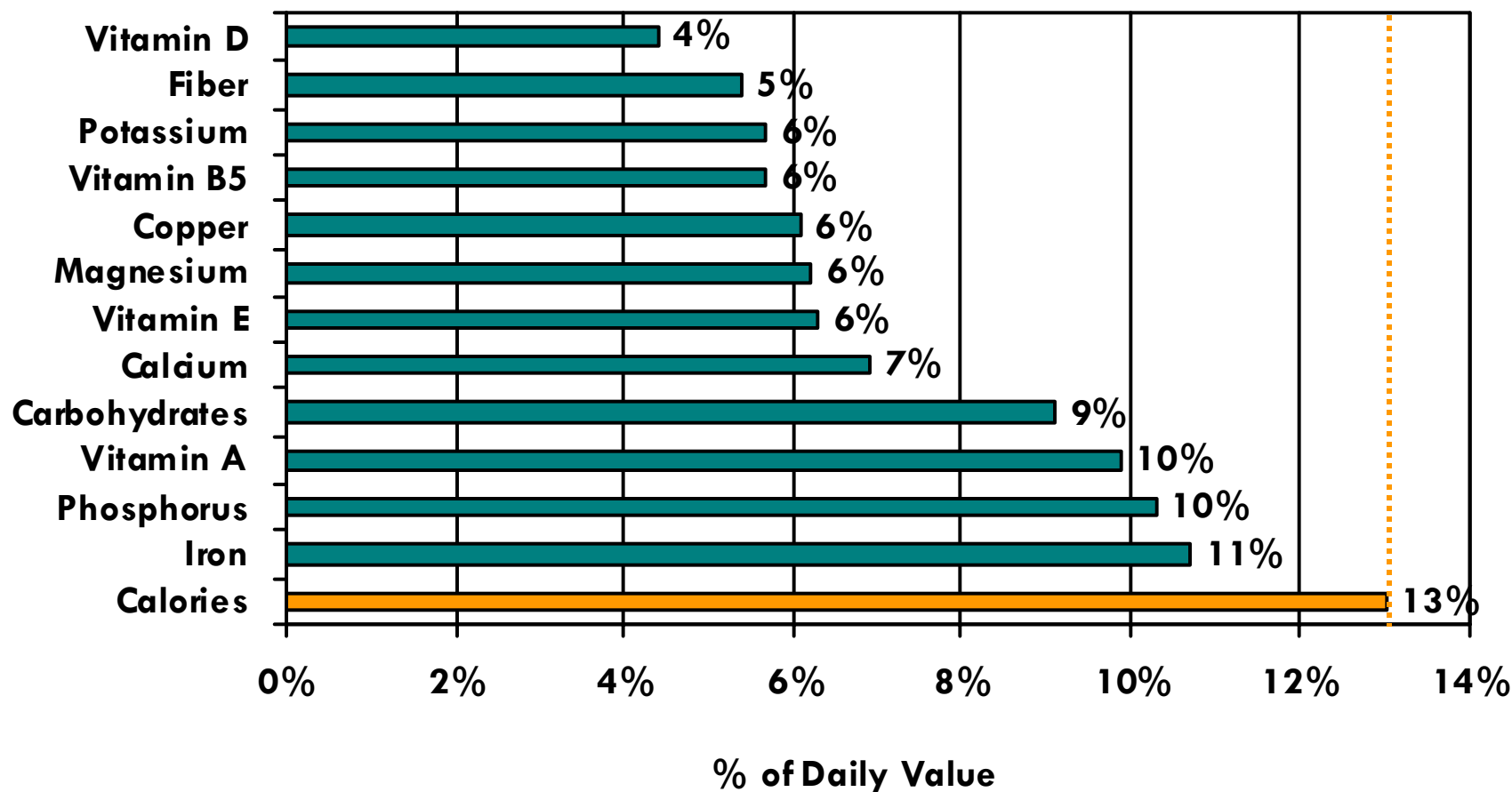
- Significantly over-supplied nutrients



Question 2: Nutrient Content



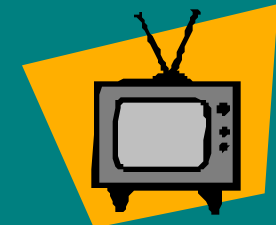
- Significantly under-supplied nutrients





Discussion

Implications for Health

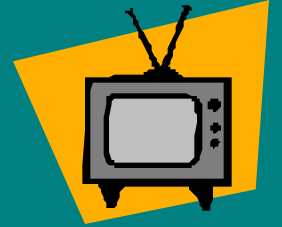


- To meet DV for calories on the “TV Diet”

Food Group	Servings	% of RDS
Sugar	12.8	2,560%
Fat	10.4	2,080%
Meat	3.2	128%
Grain	8.0	94%
Veg	1.6	40%
Dairy	0.8	32%
Fruit	0.8	27%

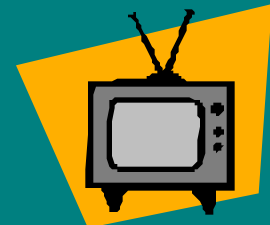
- **Toxicity**
 - Overweight and diabetes
 - Hypertension, stroke, heart disease
 - Arthritis, digestive disorders, liver and kidney impairment
 - Alcoholism and mood disorders
- **Deficiency**
 - Diverticulosis, constipation, colon cancer
 - Chronic fatigue, digestive disorders, nerve damage, reduced immunity
 - Osteomalacia, osteoporosis
 - Anemia, depression, learning disabilities, hyperactivity and lower IQ
 - Hypertension, heart disease, muscle weakness, and death

Limitations



- Sampling
 - Children's shows
 - African American households (6 shows)
 - Viewing preference by gender, language
 - Observation period
- Nutritional data
 - Data availability rates and Type II error
- Multiple comparisons
 - Type I error of 1-2 for every set of 30 nutrients

Conclusions



1. American TV promotes an implicit “TV Diet” that is contrary to nutritional guidelines.

Conclusions



Sugar & Fat (23½)

**Meat
(3)**

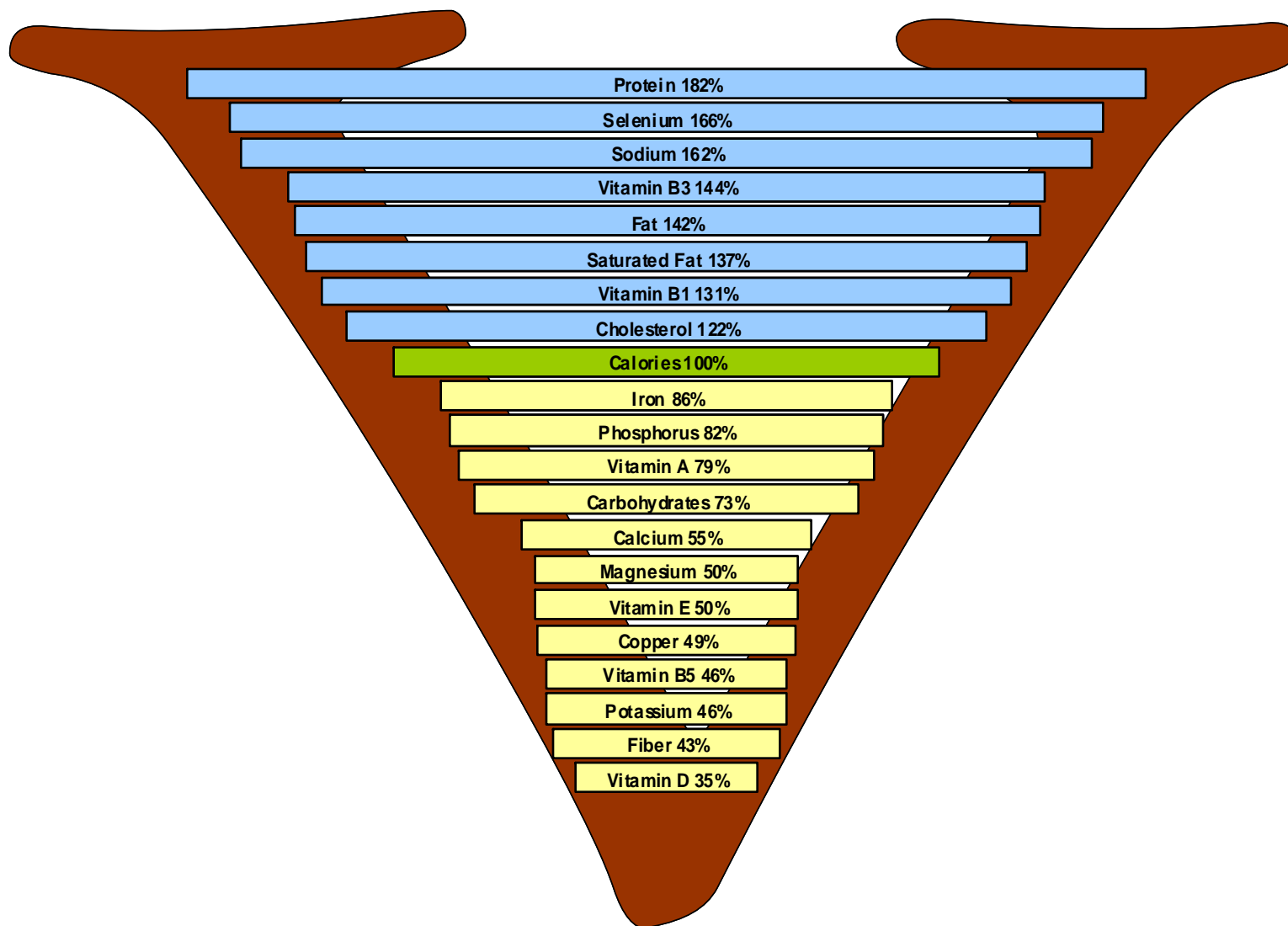
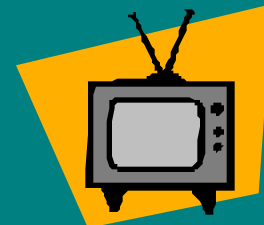
**Dairy
(1)**

**Fruit
(1)**

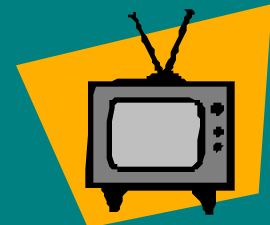
**Veg.
(1½)**

Grain (8)

Conclusions

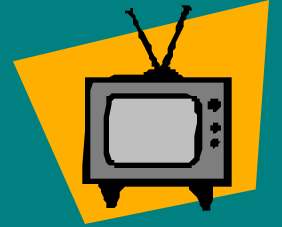


Conclusions



2. The TV Diet could easily contribute to several chronic conditions that are on the rise in America today, including obesity, heart disease, osteoporosis, and diabetes.
3. American TV does not provide the information required to counteract or improve the serious nutritional imbalance of the TV Diet.
4. The TV Diet constitutes a dangerous collection of nutritional misinformation that poses a serious environmental hazard to public health.

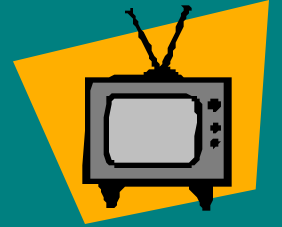
Recommendations to the Field



To TV Viewers:

- Recognize that nutritional information on TV is seriously biased toward nutritionally imbalanced food items.
- Avoid the *TV Diet* and refer to official nutritional guidelines instead.
- Remember that 20%-35% of the *single food items* advertised on broadcast TV surpass certain daily recommendations by themselves, which means these foods cannot be a part of nutritionally balanced diet.
- Understand that eating the *TV Diet* could contribute to serious chronic illness.
- Make it a general practice to supplement or substitute foods observed on TV with nutrient dense foods, such as raw fruits and vegetables.

Recommendations to the Field



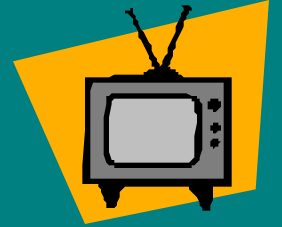
To TV Broadcasters:

- Consider airing more public service announcements during prime time and children's programming that encourage healthy eating behavior.
- Provide disclaimers for single food items that surpass daily recommendations, similar to those provided for alcohol, cigarettes, and other unhealthy consumables.

To Advertisers:

- Producers of healthy foods, such as fruits and vegetables, should place more advertisements on TV.
- Food retailers should promote more of their healthier food options and decrease their promotional efforts for unhealthy foods.
- Food producers should also consider producing healthier foods.

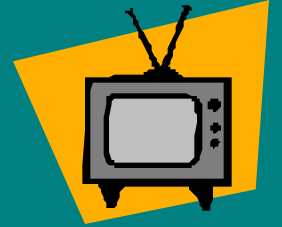
Recommendations to the Field



To Regulators:

- Require and sponsor a minimum number of PSAs that encourage healthy eating behaviors during prime time and children's programming.
- Require disclaimers for high fat, high sugar, and low nutrient density foods and for single food items that surpass daily intake limits of sugar and fat.
- Require nutritional balance in overall food promotion for each market segment.
- Prohibit use of the phrase "part of a balanced breakfast."
- Promote fortification standards to counterbalance deficiencies found in the *TV Diet*.

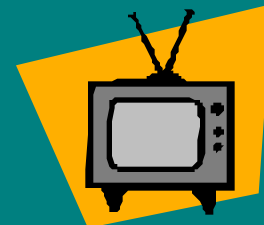
Recommendations to the Field



To Researchers:

- Conduct a similar study on children's shows only that includes a larger sample size.
- Conduct another study that includes cable access shows, which will allow better comparisons across racial, ethnic, and gender groups.
- Conduct a trend analysis that evaluates changes in the *TV Diet* over time.
- Conduct a qualitative analysis that assesses other latent nutritional messages in TV food advertisements, including unrealistic body images and artificial gender-specific food preferences.
- Explore the effects of the *TV Diet* on actual nutritional behavior.

Questions?



“In the world of television advertising, food has become the new tobacco.”

(Meade & Sinclair, 2005, p.15)

